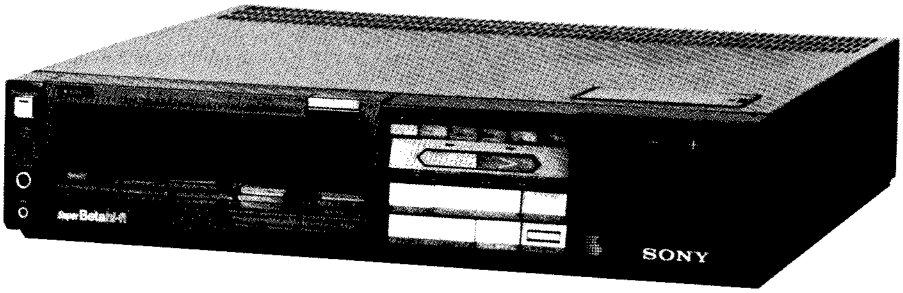
SL-HF950ES/E
RMT-223

SERVICE MANUAL

AEP Model
E Model



Super Beta hi-fi

September, 1985

CX CHASSIS

SPECIFICATIONS

System

Video recording system
Rotary two-head helical scanning

Audio recording system
Beta hi-fi PAL system (2 channels)
(Recording on the conventional audio track is monaural.)

Video signal **SL-HF950ES**
CCIR standards, PAL and DDR SECAM colour
SL-HF950E
CCIR standards, PAL colour

Aerial input 75-ohm, asymmetrical aerial socket

Stereo/bilingual system (SL-HF950ES only)
West-German two-carrier system

Channel coverage
SL-HF950ES
VHF: Western European channels E2 - U20
UHF: Western European channels E21 - E68
(Up to 30 programmes can be preset.)
SL-HF950E
VHF: Western European channels E2 - E12
UHF: Western European channels E21 - E68
(Up to 30 programmes can be preset.)

RF output signal
UHF channels E30 to E39 (variable)
75 ohms, unbalanced

Video

Horizontal resolution
280 lines (Super Beta PRO mode)

Beta hi-fi PAL sound

Frequency response
20 Hz to 20 kHz (MPX FILTER OFF)

Wow and flutter
Less than 0.005 % WRMS

Dynamic range
More than 80 dB

Inputs and outputs

Video input VIDEO IN: BNC connector
1.0 V (p-p) $^{+1.0}_{-0.5}$ V (p-p)
75 ohms, unbalanced,
sync negative

Video output VIDEO OUT: BNC connector
1.0 V (p-p) ±0.1 V (p-p)
75 ohms, unbalanced,
sync negative

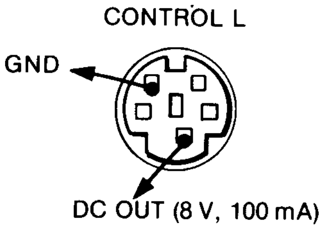
Audio inputs AUDIO IN: 2 phono jacks
47 kilohms, −10 dBs
(0 dBs = 0.775 V rms)
Microphone: −60 dBs, for low-impedance microphone

— Continued on page 2 —

Beta
VIDEO CASSETTE RECORDER

SONY®

Audio outputs AUDIO OUT: 2 phono jacks
Load impedance less than 10 kilohms
−10 dBs with 47 kilohms load, unbalanced
Headphones: Stereo phone jack
−26 dBs, 8 ohms
Video/audio output
21-pin EUROCONNECTOR
CONTROL S input
Minijack
CONTROL L input/output
5-pin connector



Tape transport
Tape speed 18.73 mm/sec.
Maximum recording time
2 hours 10 min. (with Sony L-500 cassette)
3 hours 15 min. (with L-750)
Fast forward/rewind time
Within 5 min. (with L-500)

Timer
Clock Crystal lock
Time indication
24-hour cycle
Timer setting Only for recording
6 events/3 weeks, adjustable for any day or for all 7 days of the week or for every week

General
Power requirements
110 - 240 V AC ± 10 %, 50/60 Hz
Power consumption
SL-HF950ES: 39 W
SL-HF950E: 36 W
Storage temperature
−20° C to +60° C (−4° F to +140° F)
Operating temperature
5° C to 40° C (41° F to 104° F)
Dimensions Approx. 430 × 95 × 405 mm (w/h/d)
(17 × 3 3/4 × 16 inches)
including projecting parts and controls
Weight Approx. 10.5 kg (23 lbs) net

Accessories supplied
Video cassette tape (1)
75-ohm coaxial cable for recorder to TV connection (1)
Remote Commander RMT-223 with two IEC designation R6 batteries (1)
RF channel adjustment screwdriver (1)

Design and specifications subject to change without notice.

Note
This appliance conforms with EEC Directives 76/889 and 82/499 regarding interference suppression.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

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SECTION 1
GENERAL

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

NOTE ON THE SL-HF950ES AND SL-HF950E

This instruction manual covers the SL-HF950ES and SL-HF950E.
The principal differences between the models are indicated in the following table. The differences are clearly mentioned in the text required.

	SL-HF950ES	SL-HF950E
Colour system	PAL and SECAM DDR	PAL
TV channel coverage	VHF E2 - U20 UHF E21 - E68	VHF E2 - E12 UHF E21 - E68
Stereo/bilingual TV programme reception	Provided	Not provided

The illustrations used in this manual are of the SL-HF950ES.

1-1. PRECAUTIONS

On safety

- This unit operates on 110 - 240 V ac, 50/60 Hz.
- Should any solid object or liquid fall into the cabinet, turn off the unit and have it checked by qualified personnel before operating it any further.
- To disconnect the mains lead (ac power cord), pull it out by the plug. Never pull the lead itself.
- The unit is not disconnected from the mains (ac power source) as long as it is connected to the mains outlet, even if the unit itself has been turned off.

On installation

- Allow adequate air circulation to prevent internal heat build-up. Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation grille.
- Do not install the unit near heat sources such as radiators or air ducts or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
- The unit is designed for operation in a horizontal position. Do not install it in an inclined position.
- Keep the unit and cassette tapes away from equipment with strong magnets, such as a microwave oven, large loudspeakers, etc.

On operation

- When the unit is not to be used for a long period, turn the unit off to conserve energy and to extend the useful life of your unit.
- Remove and store video cassettes after recording or playback. Always store the cassette in its case to keep the tape away from dust.

On cleaning

Clean the cabinet, panel and controls with a dry soft cloth. Do not use a moistened cloth or any type of solvent, such as alcohol or benzine, which might damage the finish.

On repacking

Do not throw away the carton and packing materials. They make an ideal container in which to transport the unit. When shipping the unit to another location, repack it as illustrated on the carton.

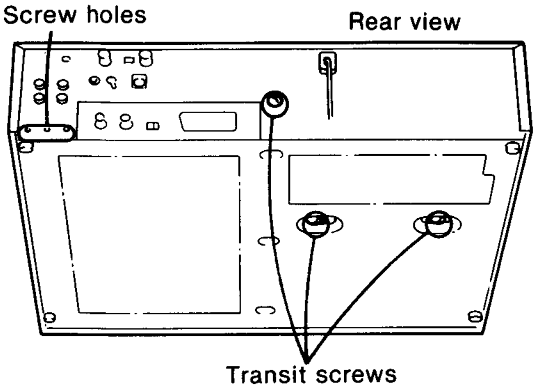
On colour broadcasting systems

This machine is designed to record and play back using the PAL colour system (SL-HF950E) or the PAL and DDR SECAM colour systems (SL-HF950ES). Recording and playback of video sources based on other colour systems cannot be guaranteed.

If you have any questions about this unit, contact your Sony dealer.

REMOVAL OF THE TRANSIT SCREWS

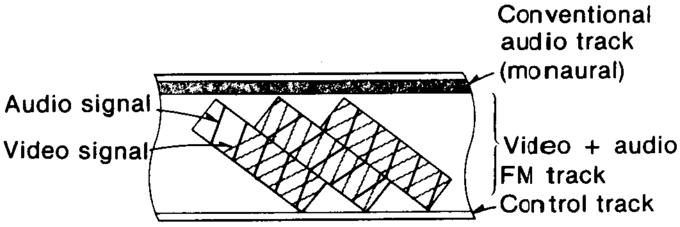
The cassette compartment is secured with three transit screws to prevent it from sliding out while the unit is being transported.
Before operating the unit, be sure to remove the transit screws, using a screwdriver. Store the screws in the screw holes at the rear, and put them back in the original positions when transporting the unit.

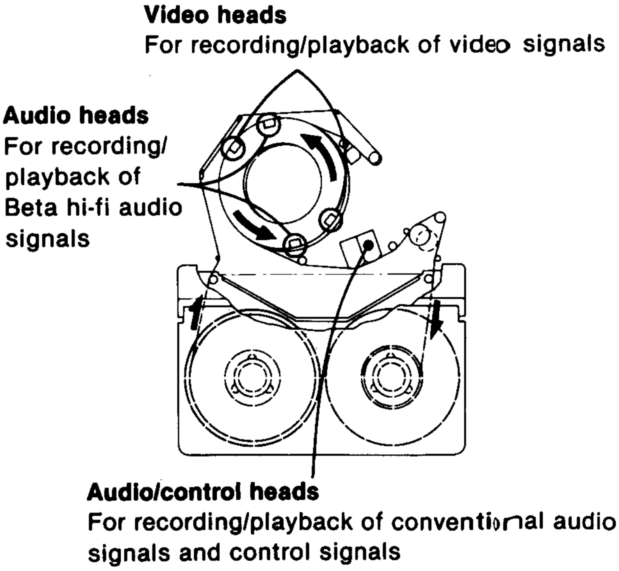

Screw holes
Rear view
Transit screws

1-2. TECHNICAL INFORMATION

HIGH QUALITY SOUND

What is Beta hi-fi PAL recording?
In conventional recording, audio signals are recorded on the audio track and the video signals on the video track. On Beta hi-fi recording, audio signals are recorded on the video track together with the video signals. In this recorder's Beta hi-fi PAL system, audio signals are recorded first, using the 2 audio heads, then video signals are recorded over the audio signals with an azimuth offset, using the 2 video heads.
Beta hi-fi audio signals are frequency-modulated and recorded on 2 channels, so you can record a stereo or bilingual programme with sound clearly superior to that of a conventional audio recording.


Conventional audio track (monaural)
Audio signal
Video signal
Video + audio FM track
Control track


Video heads
For recording/playback of video signals
Audio heads
For recording/ playback of Beta hi-fi audio signals
Audio/control heads
For recording/playback of conventional audio signals and control signals

Beta hi-fi recording on this recorder
This recorder simultaneously records audio signals on the video track (Beta hi-fi recording) and on the conventional audio track (in monaural), so that tapes recorded with this recorder can be played back on an ordinary video cassette recorder without a Beta hi-fi system.

MC-Service

HIGH QUALITY PICTURE

—Technology behind Super Beta (PAL)

Super Beta standard mode

Betamax provides a high-resolution picture thanks to its high relative tape-to-head speed produced with the large diameter head drum.

Super Beta standard mode offers even sharper and detailed picture reproduction by improving the emphasis characteristics of video signals in recording and the noise canceller characteristics in playback.

Super Beta PRO mode

In addition to the technology mentioned above, with the use of the highest-grade tape, the FM carrier frequency of the luminance signal is shifted up by 500 kHz. The results are higher resolution of the picture and improved signal-to-noise ratio of the chrominance signal. (Fig. 1)

Other technical extras

This SL-HF950ES/E employs a compression circuit for recording current of the chrominance signal for better signal-to-noise ratio. (Fig. 2) In addition, the newly developed "DA (Double Azimuth) PRO 4 HEAD" reduces interference between adjacent video tracks resulting in higher quality picture reproduction. These technologies contributes to overall picture quality of the SL-HF950ES/E.

Notes

- Super Beta PRO mode must be used with highest-grade tapes such as Sony PRO-X or equivalent tapes from other tape manufacturers.
- The tapes recorded in Super Beta should be played back in Super Beta mode.

Fig. 1 Frequency response

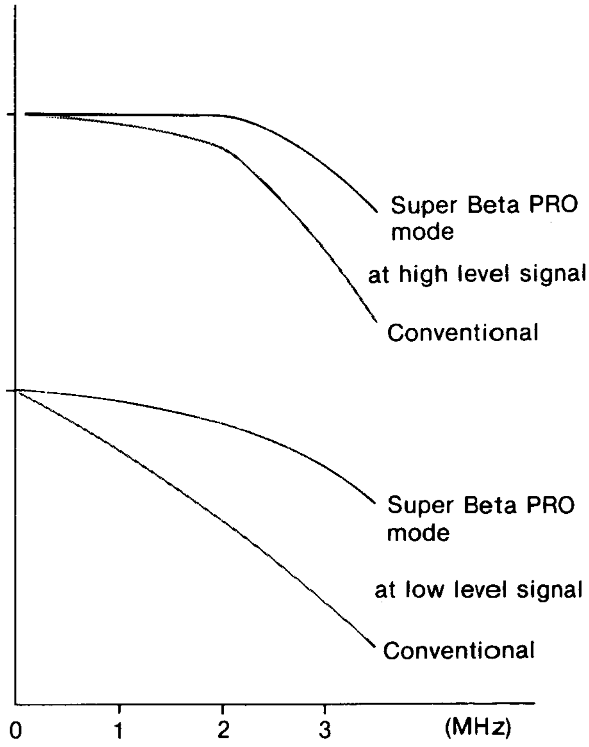
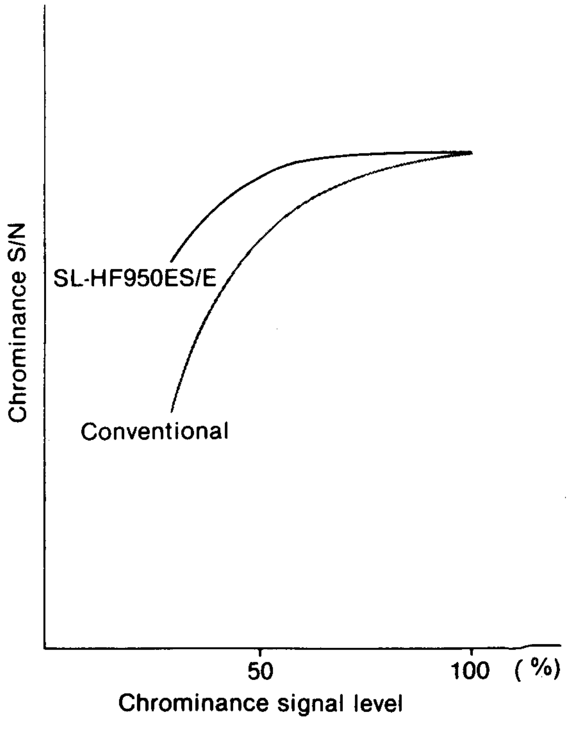
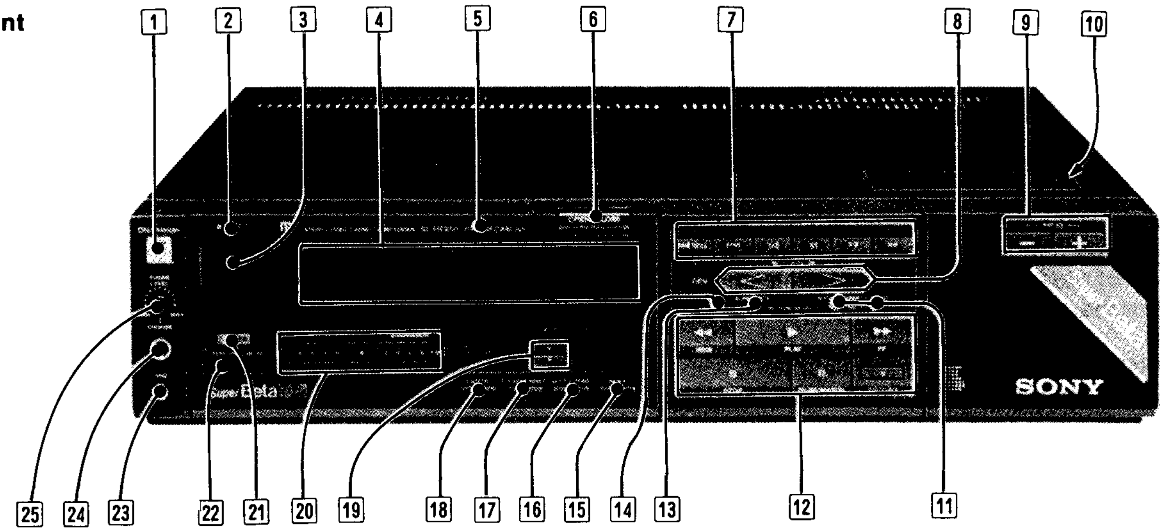


Fig. 2 Chrominance signal-to-noise ratio



1-3. LOCATION AND FUNCTION OF CONTROLS

Front

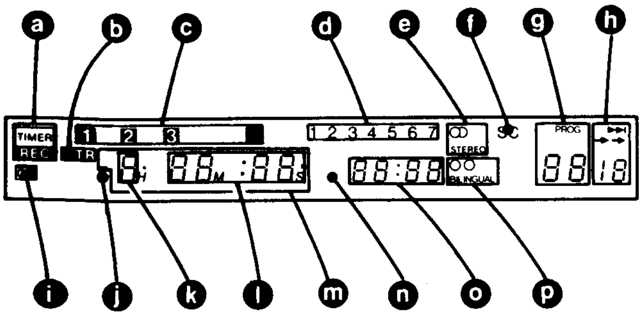


[1] ON/STANDBY switch and indicator
Press to turn on the unit. The indicator will light up. Press again to turn it off.
The timer section will continue to operate and the time will be displayed even if the ON/STANDBY switch is off.

[2] ≜ EJECT button
Press to remove the cassette. This button does not function when the recorder is turned off.

[3] REMOTE SENSOR
Detects the remote control signal transmitted from the supplied Remote Commander.

[4] Display window



- ⓐ **TIMER REC indicator:** Shows the recorder is in timer standby mode. It is also displayed during timer recording including quick timer recording.
- ⓑ **VTR indicator:** Shows the recorder is in VTR mode.
- ⓒ **Week indicators:** Show the week in which the timer recording will take place. See page 25.
- ⓓ **Day of the week indicators**
- ⓔ **STEREO indicator (SL-HF950ES only):** Shows a stereo broadcast is being received.
- ⓕ **SC (simulcast) indicator:** Shows the INPUT SELECT switch is set to SIMUL.
- ⓖ **PROG (programme) number:** Shows the programme number selected with the PROG +/– buttons. When the INPUT SELECT switch is set to LINE/PCM, the indication will change to "AU".
- ⓗ **Index indicators:** Appear when the index function is activated. See page 22.
- ⓘ **Cassette indicator:** Shows a cassette is inserted.
- ⓙ **Turn-on time setting indicator**
- ⓚ **Event number**
- ⓛ **Turn-on time** of a timer recording
- ⓜ **Time counter:** Shows the approximate tape running time.
- ⓝ **Turn-off time setting indicator**
- ⓞ **Clock/turn-off time:** Normally shows the current time. Shows the turn-off time of a timer recording during timer setting and checking.
- ⓟ **BILINGUAL indicator (SL-HF950ES only):** Shows a bilingual broadcast is being received.

[5] Cassette compartment
The compartment slides out when the ≜ EJECT button or the ▼ OPEN/CLOSE button is pressed. To slide it in, press the ▼ OPEN/CLOSE button.

[6] ▼OPEN/CLOSE button
Press to slide out the cassette compartment regardless of whether the tape is running or not. Press again to slide in the cassette compartment.

7 Variable speed playback buttons and indicators

During playback (in normal, still, fast motion or slow motion picture mode), press one of these buttons to select the desired playback speed. The indicator on the button lights. When the indicator of the > FWD FRAME button lights, the picture advances. When the indicator of the REV < FRAME button lights, the picture moves in the reverse direction.

- **▶|◀ STILL button:** For still picture
- **1/10 button:** For slow motion picture at 1/10 normal speed
- **1/5 button:** For slow motion picture at 1/5 normal speed
- **×1 button:** For normal speed picture
- **×2 button:** For double-speed picture
- **×9 button:** For fast motion picture at 9 times normal speed

8 FRAME buttons

During normal or variable speed playback, these buttons are used to select the direction of playback. Press the > FWD button for forward picture, or the REV < button for reverse picture.

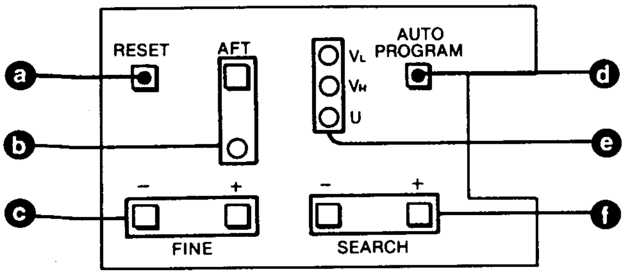
These buttons are also used for frame-by-frame playback. During pause of playback or in still picture mode, press the > FWD button to advance the picture by one frame, or the REV < button to reverse the picture by one frame. If either button is kept depressed, the picture moves frame by frame continuously.

9 PROG (programme) +/– buttons

Press + to advance or – to reverse the programme numbers. Also used for clock setting and timer setting.

10 Tuning compartment

All the switches and buttons for programming stations are in this compartment.



- ⓐ **RESET button:** To clear the programmed station, press this button.
- ⓑ **AFT button and lamp:** The AFT circuit activates automatically after the stations are tuned and memorized with automatic and manual programming. The AFT lamp will illuminate. If you wish to restore the AFT on the station which has been fine-tuned manually with the FINE buttons, press the AFT button.
- ⓒ **FINE + and – buttons:** Press to fine-tune the station.
- ⓓ **AUTO PROGRAM (automatic programming) button:** To preset the receivable stations automatically, press this button.
- ⓔ **Tuning lamps:** Lights to indicate the tuning band.
- ⓕ **SEARCH + and – buttons:** Press to tune in a station. Press the – button to get a station of lower frequency and the + button to get a station of higher frequency.

11 INSERT indicators

The AUDIO indicator lights when the AUDIO INSERT button is pressed, and the VIDEO indicator lights when the VIDEO INSERT button is pressed.

12 Function buttons

- **◀◀ REW button:** Press to rewind the tape.
- **▶ PLAY button:** Press to play the tape back.
- **▶▶ FF button:** Press to advance the tape rapidly.
- **■ STOP button:** Press to stop the tape.
- **❚❚ PAUSE/▶|◀ STILL button:** Press to stop the tape for a moment during recording or playback. Press again to release the pause mode.
- **● RECORD button:** Press to start recording.

13 SUPER BETA indicator

This indicator lights when the SUPER BETA selector is set to the SUPER BETA (STD or PRO) position.

14 EDIT indicator

This indicator lights when the EDIT switch is set to the lower position.

15 INDEX button

This button is used for the index search or index scan operation. See page 23.

16 GO TO ZERO button

In stop mode, press this button to advance or rewind the tape to approximately the "0H00M00S" point on the time counter.

17 COUNTER RESET button

Press to reset the time counter to "0H00M00S".

18 TV/VTR select button

This button is operable when a TV is connected to the recorder's 21-pin EUROCONNECTOR.

To view a TV programme selected by the PROG buttons on the recorder or to monitor the picture being recorded, press this button so that the VTR indicator appears in the display window. When the ▶ PLAY button on the recorder is pressed, the recorder is automatically set in the VTR mode. To view a TV programme in the usual manner, press this button so that the indicator goes off. When the recorder is turned off, the recorder is automatically set in the TV mode.

19 REC LEVEL (recording level) controls
Used to adjust the audio recording level of Beta hi-fi recording. Normally set these controls to 5 (green position) for recording TV programmes.

20 PEAK PROG (programme) METER/BETA HI-FI TRACKING meters
When the LEVEL METER selector is set to ON, these meters show the peak input levels of the left and right channels during Beta hi-fi recording, and recorded levels during playback.
When the LEVEL METER selector is set to BETA HI-FI TRACKING, the meters show the audio tracking adjustment. Adjust the audio tracking for optimum sound reproduction of a tape on which only the sound has been recorded in Beta hi-fi.

21 Beta hi-fi lamp
Lights to show Beta hi-fi recording, or playback of a Beta hi-fi recorded tape regardless of the BETA HI-FI selector's position.

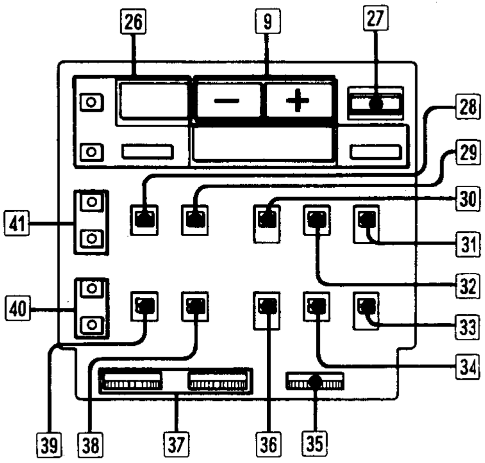
22 SOUND lamp
When the RECORD mode selector is set to SOUND, this lamp lights to show audio recording. It also lights when a tape with audio signals only is being played back.

23 MIC (microphone) jack (minijack)
Connect a microphone to record the sound from it on the conventional audio track.

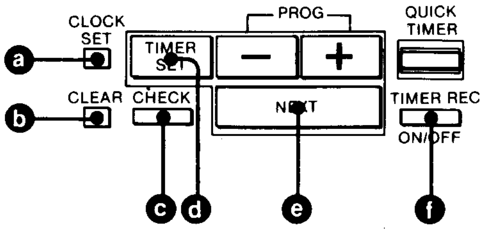
24 PHONES jack (stereo phone jack)
Connect headphones to monitor the sound.

25 PHONE LEVEL control
Adjust the sound volume of the headphones.

Inside the front panel



26 Buttons for clock and timer setting



- ⓐ **CLOCK SET button:** Press to initiate clock setting.
- ⓑ **CLEAR button:** Press to erase the memory of the timer setting.
- ⓒ **CHECK button:** Press to check timer settings.
- ⓓ **TIMER SET button:** Press to initiate timer setting.
- ⓔ **NEXT button:** Press to advance to the next item to be set during clock or timer setting.
- ⓕ **TIMER REC ON/OFF button:** Press to activate timer recording. Press it again to deactivate timer recording or quick timer recording in timer standby mode or while recording.

27 QUICK TIMER button
Press to set the recording duration up to 4 hours in units of 30 minutes.

28 TONE selector
Normally set to HIGH. If the high frequencies of the playback sound recorded on the conventional audio track seem exaggerated, set to LOW.

29 BETA HI-FI selector

Selects the video track or the conventional audio track for sound playback.

AUTO: Normally, set to this position. The recorder will automatically select the video track for Beta hi-fi recorded tapes or the conventional audio track for tapes recorded without the Beta hi-fi system.

NORMAL: Set to this position when you wish to listen to the sound recorded on the conventional audio track of a Beta hi-fi recorded tape.

30 AUDIO MONITOR selector

When the BETA HI-FI selector is set to AUTO, select the sound to be listened to. See page 18.
When the BETA HI-FI selector is set to NORMAL, the sound being recorded or already recorded on the conventional audio track is heard, regardless of the position of this selector.

31 LEVEL METER selector

Set to ON to turn on the PEAK PROG METER.
Set to OFF to turn the meter off. Set to BETA HI-FI TRACKING to adjust the audio tracking of a tape on which the sound only has been recorded in Beta hi-fi.

32 DISPLAY switch

Normally set to ON. To turn off the on-screen display on the TV or monitor, set to OFF.

33 SUPER BETA selector

Normally keep this selector at NORMAL. To record or play back in Super Beta, set to STD or PRO. See page 16.

34 EDIT switch

Normally keep this switch at the upper position. When editing a tape onto another recorder, set to the lower position.

35 SHARPNESS control

Used to adjust the sharpness of the playback picture if necessary. Normally set the control at the center detent position.

36 INPUT SELECT switch

Select the programme to be recorded.

TUNER: For recording TV programmes

SIMUL: For recording FM simulcast programmes

LINE/PCM: For recording signals connected to the VIDEO IN and AUDIO IN jacks

37 TRACKING controls

Normally keep these controls at the center detent position. Turning either of the controls may help clear possible streaks or noise bands on the screen. See "Picture adjustment for variable speed playback" on page 20.
The NORMAL control is also used for Beta hi-fi tracking adjustment.

38 MPX FILTER (multiplex filter) switch

Normally set to ON for Beta hi-fi recording. The multiplex filter cuts off the high-frequency signals which sometimes grate on the ear. If you wish to record without cutting the high frequencies, set to OFF.

39 RECORD mode selector

VIDEO: Normally, set to this position. Sound and picture are recorded in Beta hi-fi.

SOUND: Set to this position to record sound only in Beta hi-fi.

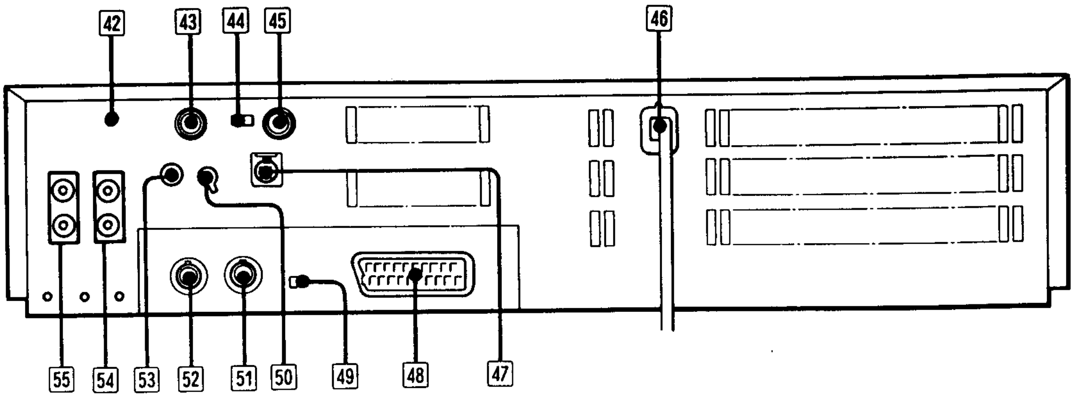
40 INSERT buttons

Use these buttons to " insert " a new recording onto a part of a recorded tape. Press the AUDIO button to insert sound on the conventional audio track. Press the VIDEO button to insert picture and/or Beta hi-fi sound on the video track.

41 INDEX buttons

Press the MARK button to mark an index signal at the desired point during recording or playback. To erase a prerecorded index signal, locate the index signal and press the ERASE button.

Rear



42 RF CHANNEL screw
If there is interference on the factory-preset channel for RF output and the signal of this recorder cannot be displayed clearly on the TV screen, adjust this screw with the supplied screwdriver.

43 AERIAL OUT socket
Connect the aerial input of the TV receiver using the supplied cable.

44 DX/LOCAL switch
Normally set this switch to DX. If the TV signal is very strong, set the switch to LOCAL.

45 AERIAL IN socket
Connect the aerial cable.

46 AC mains lead

47 CONTROL L connector (5 pin)
Connect to the CONTROL L connector of other Sony products for various system operations.

48 EUROCONNECTOR (21 pin)
Connect to the 21-pin EUROCONNECTOR of another recorder, TV or video monitor.

49 TEST SIGNAL switch
Set to ON to obtain the test pattern for adjusting the TV so that it can receive the signal from the recorder.

50 STILL ADJ (still picture adjustment) knob
If the still or slow motion picture appears to shake, turn this knob until it stabilizes.

51 VIDEO IN jack (BNC type)
Connect to the video output of a camera, another video cassette recorder, a PCM digital audio processor, etc.

52 VIDEO OUT jack (BNC type)
Connect to the video input of another video cassette recorder, a video monitor or a PCM digital audio processor.

53 CONTROL S input jack (minijack)
Connect to the CONTROL S output jack of other Sony products for various system operations.

54 AUDIO IN jacks (phono type)
Connect to the audio outputs of a camera or another video cassette recorder, or to the recording outputs of a stereo amplifier.

55 AUDIO OUT jacks (phono type)
Connect to the audio inputs of a video monitor or another video cassette recorder, or to the auxiliary inputs or tape inputs of a stereo amplifier.

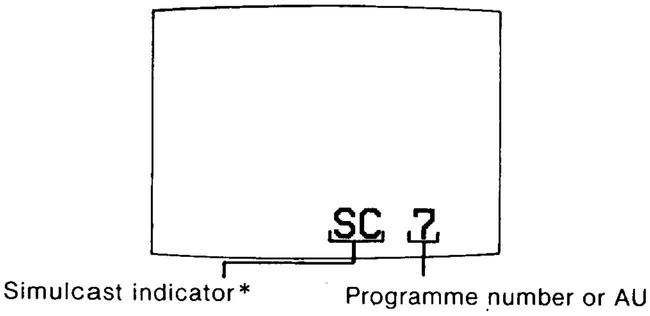
1-4. ON-SCREEN DISPLAY

The various operation modes of this recorder are displayed on the screen of the connected TV or monitor.

Note
The on-screen display does not appear when there is no picture on the screen.

WHEN A TV PROGRAMME IS SELECTED

The programme number is displayed when the INPUT SELECT switch is set to TUNER or SIMUL and the +/− PROG button is pressed.
The programme number will be turned off in several seconds.



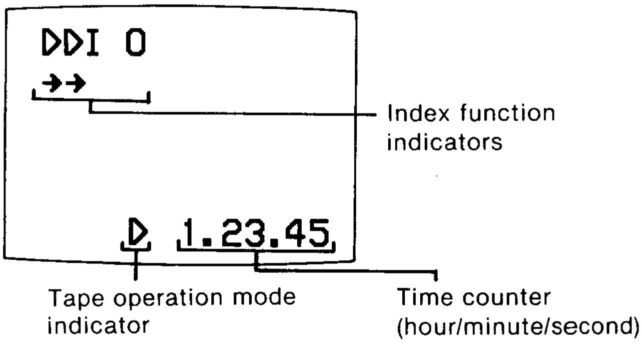
*The SC indicator appears when the INPUT SELECT switch is set to SIMUL.

WHEN THE TAPE IS IN OPERATION

The time counter and the tape operation mode are displayed.

Most of the tape operation mode indicators will be automatically turned off in several seconds.
The time counter normally remains displayed. To turn off the counter, press the COUNTER DISPLAY button on the Remote Commander. To recall the counter display, press the same button again.

Note
Once the on-screen time counter is turned off with the COUNTER DISPLAY button, it will not appear even when the recorder is turned off and on again.

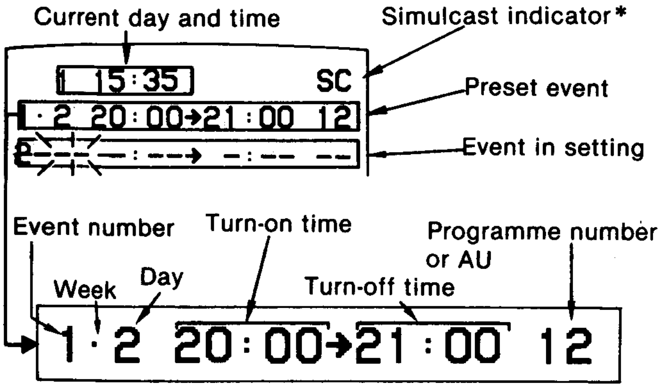

▷▷I 0
→→
Index function indicators
▷ 1.23.45
Tape operation mode indicator
Time counter (hour/minute/second)

Tape operation mode indicators

◁◁	Rewind	▷I◁	Still picture
▷	Playback	II▷	Forward frame-by-frame picture
▷▷	Fast-forward	◁II	Reverse frame-by-frame picture
(◁◁)	Reverse picture search	V●	Video insert
(▷▷)	Forward picture search	V●II	Video insert pause
▷II	Playback pause	A●	Audio insert
O	Recording	A●II	Audio insert pause
OII	Recording pause	A/V●	Audio/video insert
X9 −X9	Variable speed playback "–" indicates the reverse direction.	A/V●II	Audio/video insert pause
X2 −X2		-▷▷I-	Manual index signal mark or erase
X1 −X1		▷▷I →→	Index scan
1/ 5 −1/ 5		▷▷I	Index search
1/10 −1/10			

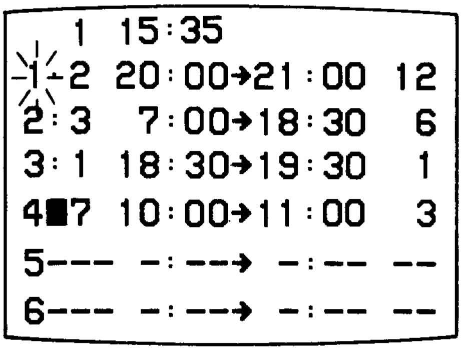
DISPLAY FOR TIMER

When the TIMER SET button is pressed, the preset events and the event in setting are displayed. The blinking item is what you are setting.


Current day and time
Simulcast indicator*
1 15:35
SC
1·2 20:00→21:00 12
2--- -:--→ -:-- --
Preset event
Event in setting
Event number
Turn-on time
Programme number or AU
Week
Day
Turn-off time
1·2 20:00→21:00 12

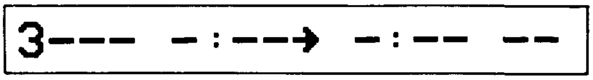
Week indicators		Day indicators	
1→7	Every day	1	Monday
·	This week	2	Tuesday
:	Next week	3	Wednesday
⋮	The week after next	4	Thursday
■	Every week	5	Friday
		6	Saturday
		7	Sunday

When the CHECK button or the TIMER DISPLAY button on the Remote Commander is pressed, the list of all preset events appears.
Every time the CHECK button is pressed, the event number blinks in sequence to show that the setting of that particular event can be changed or cleared.



```
  1 15:35
1·2 20:00→21:00 12
2:3  7:00→18:30  6
3:1 18:30→19:30  1
4■7 10:00→11:00  3
5--- -:--→ -:-- --
6--- -:--→ -:-- --
```

When the CLEAR button is pressed, the event will be erased from the memory.

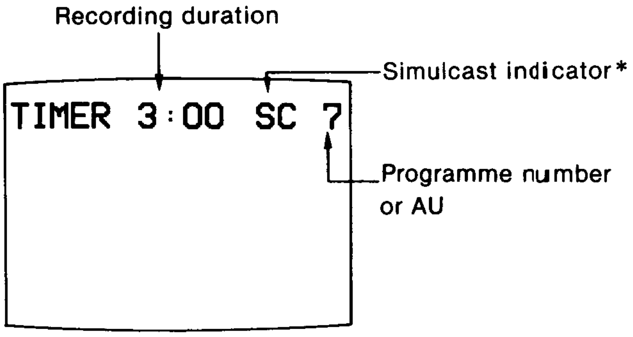


```
3--- -:--→ -:-- --
```

The timer display will be turned off when the TIMER DISPLAY button is pressed again or when the CHECK button is pressed with the last event number blinking.

WHEN THE QUICK TIMER IS ACTIVATED

The recording duration and the programme number are displayed. The display will be automatically turned off in several seconds.


Recording duration
Simulcast indicator*
TIMER 3:00 SC 7
Programme number or AU

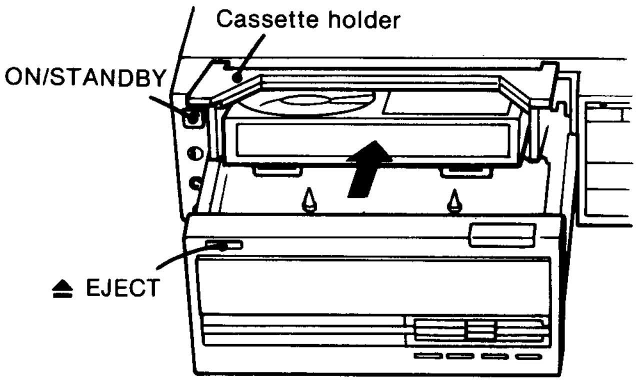
---

*The SC indicator appears when the INPUT SELECT switch is set to SIMUL.

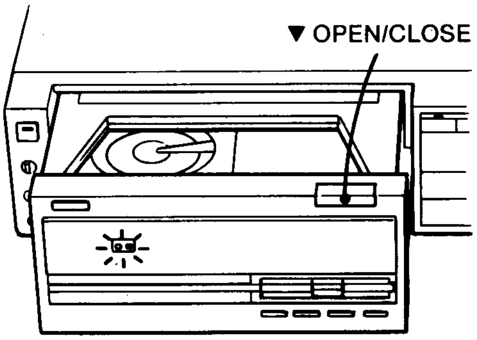
BASIC OPERATIONS

1-5. CASSETTE INSERTION

1. Press the ON/STANDBY switch. The indicator on the switch and the Beta hi-fi lamp will light.
2. Press the ⏏ EJECT button. The cassette compartment slides out and the cassette holder is raised.
3. Insert a cassette with the arrow on the cassette towards the front.



4. Press the ▼ OPEN/CLOSE button. The cassette compartment slides in and the ▣ indication appears in the display window.



In place of Step 4, you may press any of the function buttons. The cassette compartment slides in and the recorder directly goes into the selected tape operation mode.

To eject the cassette

Press the ⏏ EJECT button. The cassette compartment slides out and the cassette holder is raised. Take out the cassette by hand.

Note

The ⏏ EJECT button does not function when the recorder is turned off or during recording or audio/video inserting.

To open/close the cassette compartment

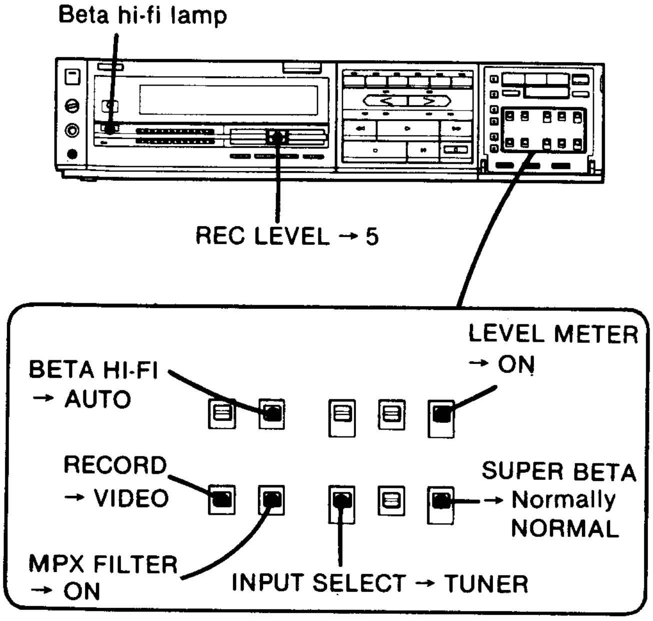
By pressing the ▼ OPEN/CLOSE button, the cassette compartment can be slid out or in even while the tape is running, allowing check of the remaining tape amount.

Notes on the cassette compartment

- Be careful not to trap your hand between the cassette compartment and the cabinet when the compartment is moving. If you should do so, the cassette compartment will automatically stop and move in the opposite direction in several seconds.
- Do not insert anything other than a cassette inside the cassette holder and compartment.
- Do not push down on the cassette holder forcibly when it is raised. If excessive force is applied, the protective device is activated to stop the cassette compartment movement and recorder operation. In this case, press the ▼ OPEN/CLOSE button.
- Frequent moving of the cassette compartment during recording is not recommended, since this may affect the recording.

1-6. TV PROGRAMME RECORDING (Beta hi-fi recording)

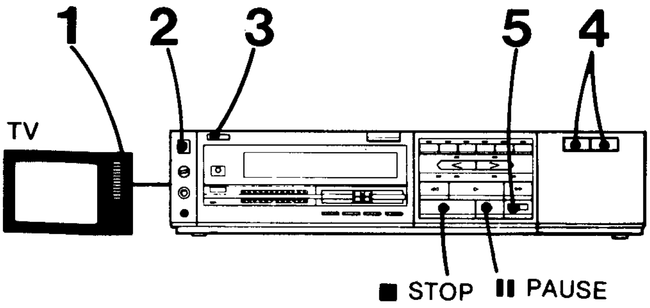
Check before recording
The green position is the standard setting position for Beta hi-fi recording.



Recording will be made both on the video track (Beta hi-fi recording) and on the conventional audio track.

TO RECORD

Numbers in the illustration show the sequence of operation.



1 Turn on the TV and select the programme position for the recorder.
2 Press the ON/STANDBY switch. The indicator on the switch and the Beta hi-fi lamp will light up.
3 Insert the cassette. See page 15.
4 Select the programme to be recorded with the +/– PROG buttons.
5 Press the ● RECORD button. The indicator on the button will light and recording will begin.
- If the inserted cassette does not have the safety tab, the cassette will be automatically ejected.

To stop recording momentarily, press the ❚❚ PAUSE button. The indicator on the button will light. The TV programme can be seen on the TV, but the picture will not be recorded.
To resume recording, press the ❚❚ PAUSE button again. To protect the video heads and the tape, the pause mode will be automatically released after about 8 minutes and recording will stop.

To stop recording, press the ■ STOP button.

To eject the cassette, press the ⏏ EJECT button after stopping the recording.

To view another TV programme while recording, simply select the programme you want to view with the TV's programme selector.

When the tape reaches the end during recording, it will be automatically rewound.

CAUTION
Television programmes, films, video tapes and other materials may be copyrighted.
Unauthorized recording of such material may be contrary to the provision of the copyright laws.

SUPER BETA selector
NORMAL position: Normally keep the selector in this position. When playing back tapes recorded on other non-Super Beta recorders or tapes recorded on this recorder by setting this selector to the NORMAL position, set the selector in this position.
SUPER BETA STD (standard) position: In this position, high quality recording and playback picture are obtained.
SUPER BETA PRO position: If you use the highest-grade tape such as Sony PRO-X or equivalent tapes from other tape manufacturers, further enhanced picture quality is attained. With lower-grade tapes, however, the picture quality will suffer somewhat.
When the SUPER BETA selector is set to the SUPER BETA STD or PRO position, the SUPER BETA indicator lights.

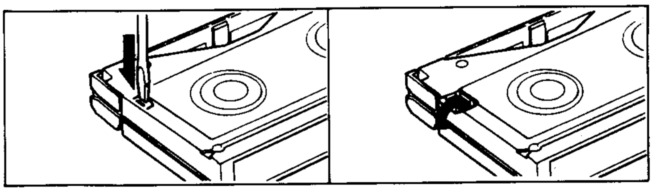
Note
The picture quality will suffer somewhat, if a tape recorded in the SUPER BETA PRO or STD position is played back on other non-Super Beta recorders, or on this recorder with this selector set to NORMAL.

TO KEEP A RECORDED PROGRAMME FROM BEING ACCIDENTALLY ERASED

When a new recording is made on a previously recorded cassette, the previous recording will be automatically erased.

To avoid erasing a recording
Break off the safety tab using a screwdriver or similar object.

To re-record on a cassette which has had the safety tab removed
Cover the slot with a piece of plastic tape.



If you activate the ● RECORD, TIMER REC ON/OFF, VIDEO INSERT or AUDIO INSERT button with a cassette with its safety tab removed inserted, the cassette will be automatically ejected.

RECORDING A STEREO OR BILINGUAL TV PROGRAMME (SL-HF950ES only)

When the OO STEREO indication appears in the display window, a stereo programme is being received. The recording procedure is the same as in " TV programme recording ". The sound is recorded both on the video track (stereo) and on the conventional audio track (monaural).

Conventional audio track	Monaural recording
Video track	Stereo recording

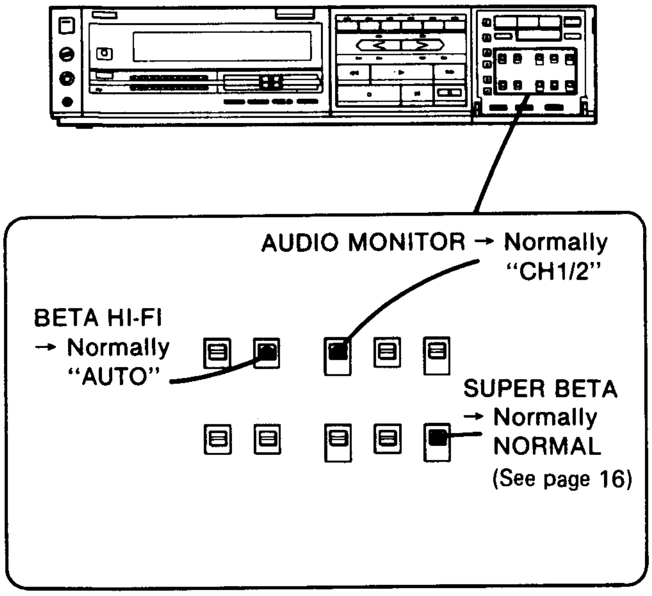
When the OOBILINGUAL indication appears in the display window, a bilingual programme is being received. The recording procedure is the same as in "TV programme recording".
Both the local language (usually broadcast on channel 1) and the original language (usually broadcast on channel 2) are recorded on the video track, and only the language on channel 1 is recorded on the conventional audio track.

Conventional audio track	Language on channel 1
Video track	Languages on channels 1 and 2

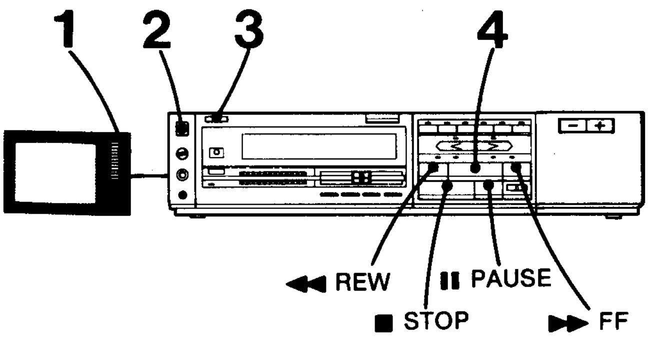
The sound of a stereo or bilingual programme can be monitored by selecting the desired sound with the AUDIO MONITOR selector. See page 18.

1-7. PLAYBACK

Check before playback


AUDIO MONITOR → Normally "CH1/2"
BETA HI-FI → Normally "AUTO"
SUPER BETA → Normally NORMAL
(See page 16)

Numbers in the illustration show the sequence of operation.



1. Turn on the TV and select the programme position for the recorder.
2. Press the ON/STANDBY switch. The indicator on the switch and the Beta hi-fi lamp will light up.
3. Insert the cassette. See page 15.
4. Press the ▶ PLAY button. The indicator on the button will light and playback will begin.

To stop playback, press the ■ STOP button.

To rewind the tape, press the ◀◀ REW button.

To advance the tape rapidly, press the ▶▶ FF button.

To eject the cassette, press the ⏏ EJECT button.

When the tape reaches the end during playback, it will be automatically rewound.

To stop playback momentarily, press the ❚❚ PAUSE button. A still picture will be seen on the TV screen. To resume playback, press the ❚❚ PAUSE button again or press the ▶ PLAY button.
The pause mode will be automatically released after about 8 minutes and the playback will resume.

SELECTION OF PLAYBACK/RECORDING MONITOR SOUND

For Beta hi-fi recorded tapes
Normally set the BETA HI-FI selector to AUTO. The sound on the video track will be heard. To listen to the sound on the conventional audio track, set the selector to NORMAL.
Return the selector to AUTO after playing back the tape.

During normal playback, the Beta hi-fi lamp lights to show that the tape is Beta hi-fi recorded. Therefore, the lamp also lights when the sound on the conventional audio track of a Beta hi-fi recorded tape is being played back.

For Beta hi-fi recorded stereo or bilingual tapes
Set the BETA HI-FI selector to AUTO and select the sound to be listened to through the speakers or headphones with the AUDIO MONITOR selector. Set to CH1/2 to listen to the stereo sound or both languages. If you want to listen only to the left or right channel of stereo programmes or either language of bilingual programmes, set to CH1 or CH2, referring to the following table.

AUDIO MONITOR selector	Sound to be listened to through:	
	Left speaker	Right speaker
CH1/2	Left channel (Language on channel 1)	Right channel (Language on channel 2)
CH1	Left channel (Language on channel 1)	
CH2	Right channel (Language on channel 2)	

( ) for bilingual programmes

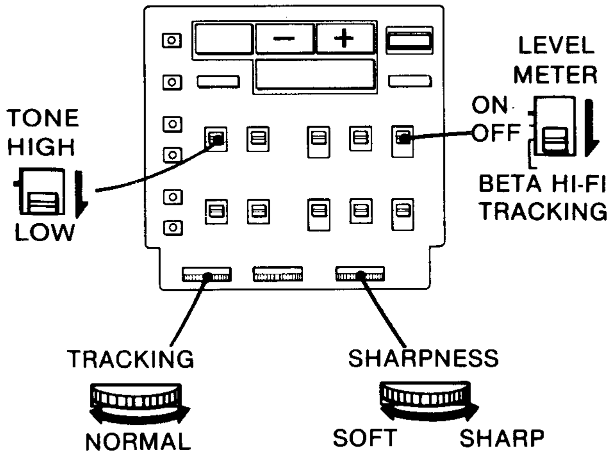
Note
If this recorder is connected to a monaural TV or it is connected to the aerial input of a TV, the sound will be always heard in monaural.

For non-Beta hi-fi recorded tapes
A tape recorded on another recorder without Beta hi-fi system is played back in the conventional way, regardless of the position of the BETA HI-FI and AUDIO MONITOR selectors.

VARIOUS PLAYBACK MODES

PICTURE AND SOUND ADJUSTMENT

- To adjust the sharpness of the playback picture, turn the SHARPNESS control.
- If streaks or snow appear during playback of a tape recorded on another recorder, adjust the NORMAL TRACKING control for the best possible picture. Return the control to the centre position after playing back that particular tape.
- If the sound of a tape recorded on another Beta hi-fi recorder is noisy or cannot be heard, adjust the NORMAL TRACKING control.
- If the high frequencies of the playback sound recorded on the conventional audio track seem exaggerated, set the TONE selector to LOW. Return it to HIGH after playing back that particular tape.
- When playing back a tape with only the sound recorded in Beta hi-fi (that is, a tape recorded with the RECORD mode selector set to SOUND), set the LEVEL METER selector to BETA HI-FI TRACKING and adjust the NORMAL TRACKING control so that the meters deflect to the right as far as possible.


TONE
HIGH
LOW
LEVEL METER
ON
OFF
BETA HI-FI TRACKING
TRACKING
NORMAL
SHARPNESS
SOFT
SHARP

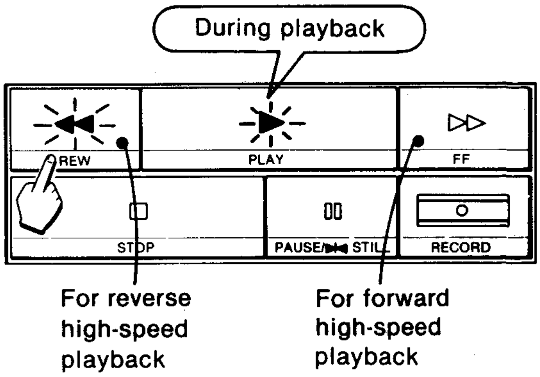
Note

The BETA HI-FI TRACKING meters function properly only when a tape recorded with the RECORD mode selector set to SOUND is being played back. For tapes recorded with the selector in the VIDEO position, the meters do not deflect at all or deflect minimally.

PICTURE SEARCH

—Viewing the picture at high speed to find a particular scene

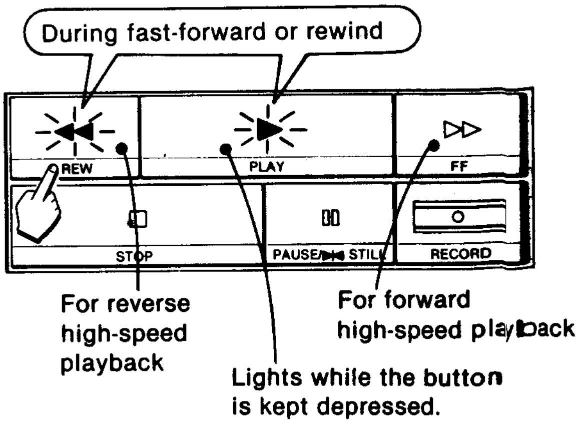
During playback, keep the ◀◀ REW or ▶▶ FF button pressed to reverse or advance the picture at high speed. Release the button at the desired point. Normal playback will resume. The picture search mode can also be assured directly from the pause mode.

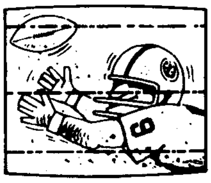

During playback
REW
PLAY
FF
STOP
PAUSE/▶◀ STILL
RECORD
For reverse high-speed playback
For forward high-speed playback

SKIP SCAN

—Viewing the picture momentarily in the fast-forward or rewind mode

During rewind or fast-forward mode, keep the ◀◀ REW button pressed for high-speed picture reverse, or keep the ▶▶ FF button pressed for high-speed picture advance. The picture appears momentarily while either of the buttons is pressed. Release the button at the desired point. Normal rewind or fast forward mode will resume.


During fast-forward or rewind
REW
PLAY
FF
STOP
PAUSE/▶◀ STILL
RECORD
For reverse high-speed playback
For forward high-speed playback
Lights while the button is kept depressed.

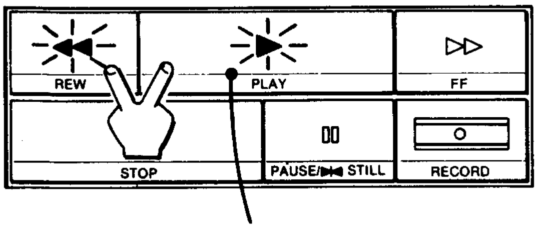


Streaks will appear during the picture search and the skip scan modes.

AUTO PLAY

—To rewind the tape and automatically play it back

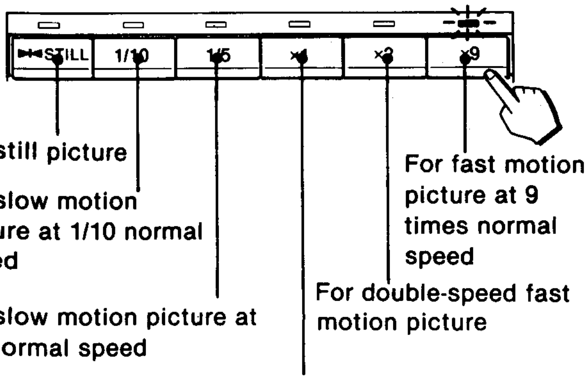
Press the ▶ PLAY button and ◀◀ REW button simultaneously in stop mode. After the tape is rewound to the beginning, it will be automatically played back.



Blinks while rewinding

VARIABLE SPEED PLAYBACK

During playback or pause of playback, press one of the variable speed playback buttons. The indicator on the button lights.
The sound will be muted during variable speed playback.



For still picture

For slow motion picture at 1/10 normal speed

For slow motion picture at 1/5 normal speed

For normal speed picture

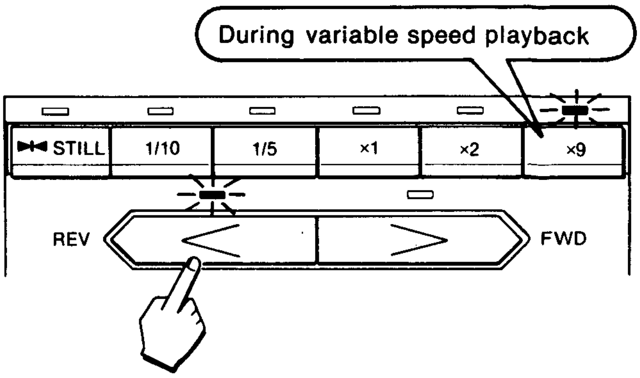
For double-speed fast motion picture

For fast motion picture at 9 times normal speed

To resume normal playback, press the ▶ PLAY button.

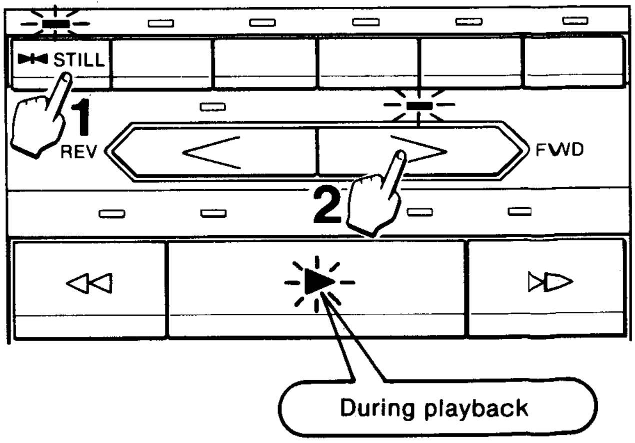
To change the playback speed, simply press the desired variable speed playback button.

To reverse the direction of the variable speed playback, press the REV < button. The indicator on the button lights. To resume forward playback, press the > FWD button.



During variable speed playback

Frame-by-frame playback
Play back the tape and press the ❚❚ PAUSE/▶◀ STILL button or the ▶◀ STILL button. Then press the > FWD or REV < button momentarily. Each time the button is pressed, the picture advances or reverses by one frame. If the > FWD or REV < button is kept depressed, the picture advances or reverses frame by frame continuously.



During playback

Picture adjustment for variable speed playback

- If the still picture appears to shake, turn the STILL ADJ knob on the rear panel until the picture stabilizes. As long as the same TV is used with this recorder, this adjustment should not be needed so frequently.
- If streaks or noise bands appear in still picture or slow motion (1/5 or 1/10) forward picture or in frame-by-frame playback, adjust the SLOW TRACKING control.
- If streaks or noise bands appear in normal (×1) or double speed (×2) forward picture, adjust the NORMAL TRACKING control.

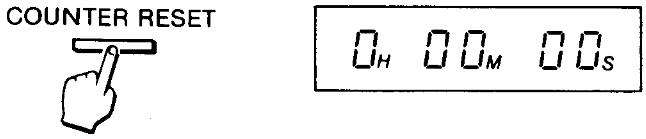
Note
The Beta hi-fi lamp and the SOUND lamp do not light during variable speed playback.

1-8. USE OF THE TIME COUNTER

The time counter indicates the approximate running time of the tape and the relative position of programmes on the tape.

TO INDEX THE TAPE CONTENTS

Before starting recording or playback, press the COUNTER RESET button to set the counter to "0H00M00S". By noting the counter reading at the desired point, you can easily find that point later by referring to the counter. Use the label on the cassette to list the programmes and their counter readings.



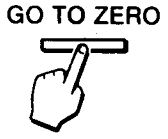
Notes

- The counter reading is automatically reset to zero when a cassette is newly inserted.
- The counter reading will be retained in the memory even after the power is turned off, as long as the cassette is in the cassette compartment.
- The counter will not advance during any portion of a tape that is blank or unrecorded. So the counter can be used to find unrecorded sections on a tape.

"GO TO ZERO" FUNCTION

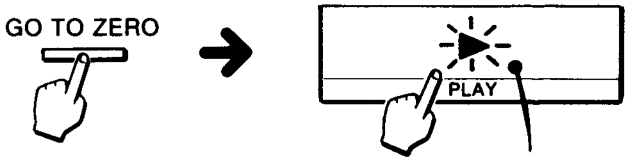
—To stop the tape at a particular point or play back from a particular point

1. During recording or playback, press the COUNTER RESET button at the point you later want to locate.
2. When recording or playback is finished, stop the tape and press the GO TO ZERO button.
   The tape will be rewound or advance close to the point where the counter reads "0H00M00S".
   During rewinding or fast-forward mode, the indicator on the ◀◀ REW or ▶▶ FF button lights, depending on the tape movement direction.



To start playback automatically from the "0H00M00S" point

Press the ▶ PLAY button after pressing the GO TO ZERO button.



Blinks during rewind or fast-forward mode.

Note

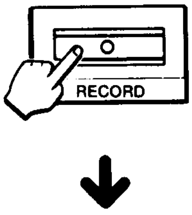
The "go to zero" function cannot be activated when the counter reading is within ± 0H00M10S.

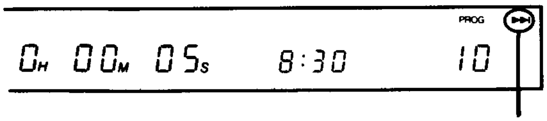
1-9. INDEX FUNCTION

The desired programme can be easily located by the index signal marked on the tape.

TO MARK INDEX SIGNALS

An index signal is automatically marked on the tape when the ● RECORD button is pressed or when a timer recording starts.





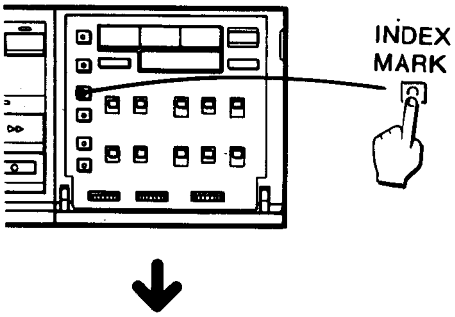
Blinks while the index signal is being marked.

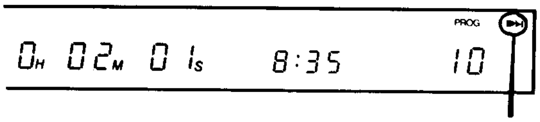
Notes

- Index signals will not be marked on the tape when the recording is started by releasing the recording pause mode.
- The index function operates also with the index signals marked using the index function of other recorders.

Index signals can be marked at any desired point on the tape during recording, timer recording or normal playback.

At the point where an index signal is to be marked, press the INDEX MARK button.





Blinks while the index signal is being marked.

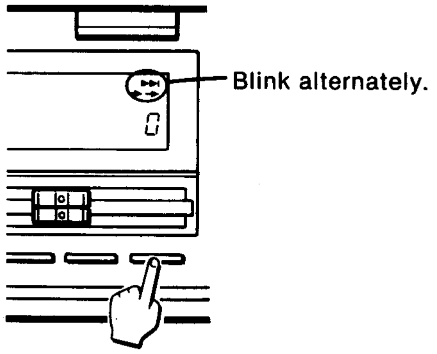
Notes

- During playback, the sound recorded on the tape will be muted while the index signal is being marked, but the recording will not be affected.
- Index signals can be marked on cassette tapes without a safety tab (including commercially available prerecorded video tapes).

INDEX SCAN

—To play back the beginning of each programme in sequence

1 Insert a cassette that has index signals marked.
2 Press the INDEX button once. The ▶▶| and →→ indicators will blink alternately, and the index number 0 is displayed.



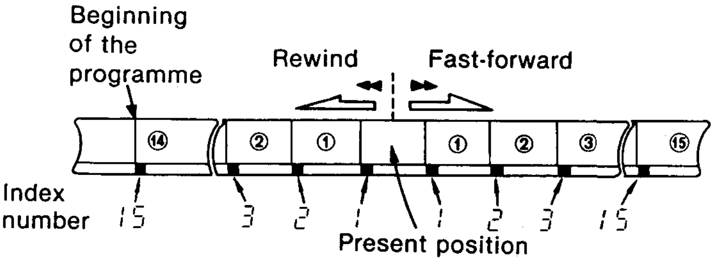
INDEX

3 To scan the previous programmes, press the ◀◀ REW button.
To scan the programmes ahead, press the ▶▶ FF button.
The ▶▶| and →→ indicators will blink simultaneously and the tape will be rewound or rapidly advanced to the next index signal marked.
Whenever an index signal is detected, the tape will be played back for approximately 10 seconds, and then rewound or rapidly advanced to the next index signal.
Every time an index signal is detected and playback begins, the displayed index number increases.
4 At the desired programme, press the the ▶ PLAY button. Normal playback of that programme will begin.

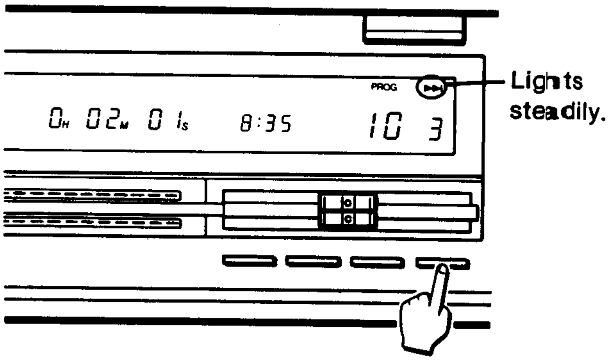
INDEX SEARCH

—To locate the desired programme

You can locate the desired programme and play it back automatically by designating the number of its index signal. Up to the 15th index signal from the present position on the tape can be located.



1 Insert a cassette that has index signals marked.
2 Press the INDEX button several times until the index number of the desired programme is displayed.
For instance, to locate the second programme ahead, two index signals should be detected, so press the INDEX button until " 2 " is displayed. On the other hand, to locate the second programme behind, three signals should be detected, so press the button until " 3 " is displayed.



INDEX

- If you enter an incorrect index number, press the ■ STOP button to reset the display.

3 To locate a previous programme on the tape, press the ◀◀ REW button.
To locate a programme ahead, press the ▶▶ FF button.

The tape will be rewound or rapidly advanced. Every time an index signal is detected, the displayed index number will decrease. When the number reaches 0, play back of your desired programme will begin.

Notes

- The index function can be activated during playback, as well as from stop mode.
- While the index signals are being scanned or located, there will be no picture or sound.
- If the tape is rewound to the beginning during index scan or index search, playback will begin automatically.
- If the tape reaches the end during index scan or index search, the tape will be rewound automatically.

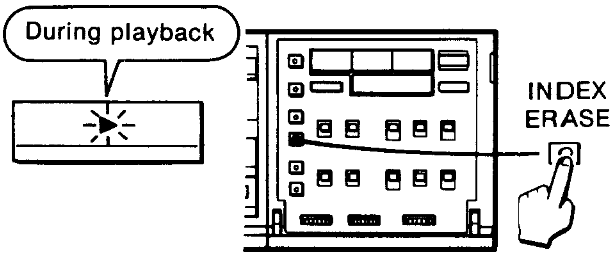
When the desired programme cannot be played back with the index function, check the following:

- The nearest index signal may not have been counted. If the point where you pressed the ◀◀ REW or ▶▶ FF button is fairly close (within 2 minutes of the normal tape-run) to the nearest index signal, that signal will not be counted. In such a case, designate one number less than the actual number.
- Is there a space of more than 2 minutes between two index signals? If there is more than one index signal marked within an interval of 2 minutes of the normal tape-run, the mechanism may not function properly.

TO ERASE INDEX SIGNALS

Erasing while index scanning—To erase the index signals in sequence

1. Stop the tape with the ■ STOP button.
2. Press the INDEX button once.
3. To erase the previous index signals on the tape, press the ◀◀ REW button. To erase the index signals ahead, press the ▶▶ FF button.
   The tape will be rewound or rapidly advanced to the next index signal and playback will begin.
4. **With the tape played back** for approx. 10 seconds, press the INDEX ERASE button. The → indicator will stop blinking while the ▶▶| indicator continues blinking and the index signal will be erased.



After the erasure, index scan will resume. At each index signal located, press the INDEX ERASE button to erase the signal.
To stop index scanning, press the ■ STOP button.

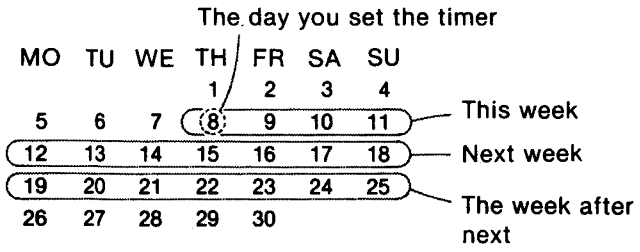
Erasing while index searching—To erase a particular index signal

1. Stop the tape with the ■ STOP button.
2. Press the INDEX button several times until the number of the index signal to be erased is displayed.
3. To locate and erase the previous index signal, press the ◀◀ REW button. To locate and erase the index signal ahead, press the ▶▶ FF button.
4. **With the tape played back** for approx, 10 seconds, press the INDEX ERASE button. The ▶▶| indicator will blink and the index signal will be erased.

After the erasure, normal playback will begin.

1-10. TIMER-ACTIVATED RECORDING

Using the built-in timer, you can make six recordings on any day or every day, this week, next week or the week after next, or on the same day every week.


The day you set the timer
MO TU WE TH FR SA SU
1 2 3 4
5 6 7 8 9 10 11
12 13 14 15 16 17 18
19 20 21 22 23 24 25
26 27 28 29 30
This week
Next week
The week after next

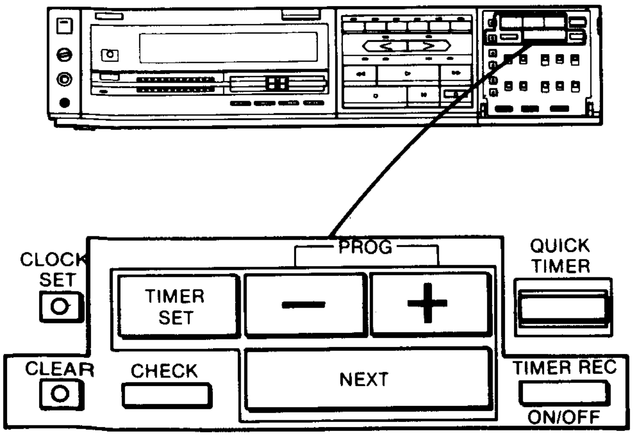
Check before setting the timer

- Is the clock set to the correct day and correct time? Timer setting can only be made after the clock has been set.
- Is a cassette inserted in the recorder?
- Is the cassette long enough to record the programmes?
- Does the cassette have a safety tab on the bottom?
- Is the INPUT SELECT switch set to TUNER for recording TV programmes?

Note: The timer cannot be set during playback.

TO SET THE TIMER

Example: To record a PROGRAM 2 broadcast from 9:00 AM to 11:25 AM on Saturday next week.


CLOCK SET
PROG
TIMER SET
−
+
QUICK TIMER
CLEAR
CHECK
NEXT
TIMER REC ON/OFF

NEXT button
Every time you press the NEXT button, the item to be preset will blink and you will be setting the item.

PROG +/− buttons
To set the day of the week, the time and the programme number, press the + button to advance, and the − button to go back.

Week and day indicators
By pressing the + PROG button, the week and day indicators change as follows:
Ex. Today is Saturday.

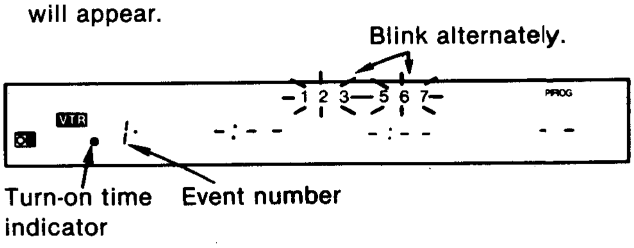
1 (This week) 2 (Next week)
1234567 → 6 → 7 → 1 → 2 → ··· 7
(Every day) (Saturday) (Sunday) (Monday)

3 (The week after next) ■ (Every week)
→ 1 → 2 → ··· 7 → 1 → 2 → ··· 7

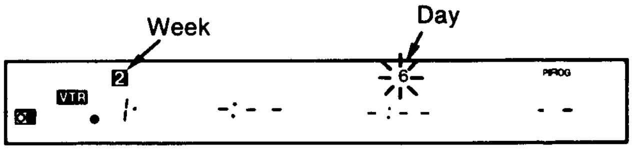
To record at the same time every day, select "1234567". To record at the same time and day every week, select the desired day indicator together with "■ (every week)" indicator.

Setting procedure

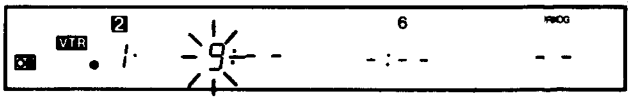
1 Press the TIMER SET button. (If the recorder is off, it will be turned on automatically.) An empty event number for which no timer setting has been made will appear.


Blink alternately.
1 2 3 5 6 7
PROG
VTR
1.
-:- -
-:- -
- -
Turn-on time indicator
Event number

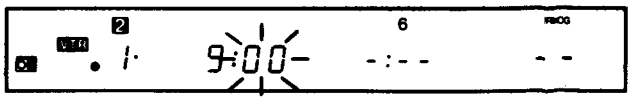
2 Set the week and day by pressing the + or − PROG button.


Week
Day
2
6
PROG
VTR
1.
-:- -
-:- -
- -

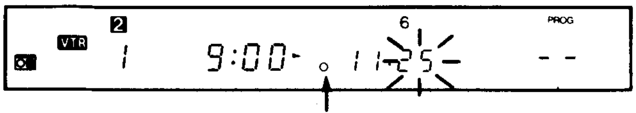
3 Press the NEXT button and set the turn-on hour by pressing the + or − PROG button.


2
6
PROG
VTR
1.
9:- -
-:- -
- -

4 Press the NEXT button and set the minute by pressing the + or − PROG button.

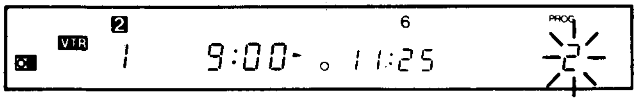

2
6
PROG
VTR
1.
9:00
-:- -
- -

5 Press the NEXT button and set the turn-off hour and minute as in turn-on time setting.



Turn-off time indicator

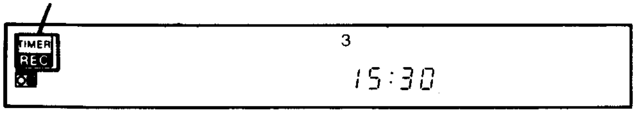
6 Press the NEXT button and select the programme to be recorded with the + or – PROG button.
To record the signals from the equipment connected to the VIDEO IN and AUDIO IN jacks, set the INPUT SELECT switch to LINE/PCM so that "AU" indication appears.



7 Press the NEXT button.
The display reverts to the time counter and the current time.

To set more events, press the TIMER SET button again to display the next event number. Repeat steps 2 to 7 above.

8 Press the TIMER REC ON/OFF button. The TIMER REC indicator appears and the recorder is turned off.


Appears.

At the preset turn-on time, recording will start automatically and will stop at the preset turn-off time.

Note
If the inserted cassette does not have the safety tab, the cassette will be automatically ejected when the TIMER REC ON/OFF button is pressed.

ONCE THE TIMER REC INDICATOR HAS BEEN DISPLAYED, NO FUNCTION OF THE RECORDER CAN BE ACTIVATED, except for checking the timer setting.
To operate the recorder after setting the timer for recording, press the TIMER REC ON/OFF button so that the TIMER REC indicator goes off. To reactivate the timer recording standby mode, be sure to press the TIMER REC ON/OFF button again.

WHILE SETTING THE TIMER

To change the preset item
Press the CLEAR button and repeat the timer setting procedure from Step 1.

To record to the end of the tape
Set the turn-off time to a time after the tape will reach its end.

BEFORE OR DURING TIMER RECORDING

To check the timer settings
Press the CHECK button. Each time the CHECK button is pressed, the preset events are displayed in sequence.

To change the settings
1 Press the TIMER REC ON/OFF button if the TIMER REC indicator is diplayed.
2 Press the CHECK button sufficient times to display the event to be changed in the display window.
3 Press the TIMER SET button.
4 Press the NEXT button sufficient times until the item to be changed blinks.
5 Change the setting with the + or – PROG button.
6 Press the NEXT button until the time counter and the current time appear.
7 Press the TIMER REC ON/OFF button again to reactivate the timer.

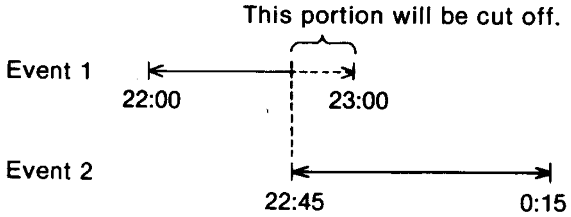
To erase the timer setting of an event
1 Press the TIMER REC ON/OFF button if the TIMER REC indicator is displayed.
2 Press the CHECK button sufficient times to display the event to be erased.
3 Press the CLEAR button.
The event will be erased from the memory.
4 If other events have been preset for recording, press the TIMER REC ON/OFF button again to reactivate.

Note: When the TIMER REC indicator is displayed, the timer setting cannot be erased.

If the tape reaches the end during timer recording
The recording will stop and the tape will be rewound to the beginning. Then after about a second, the recorder will be turned off.

To stop the on-going timer recording
Press the TIMER REC ON/OFF button so that the TIMER REC indicator goes off. The unit will be turned off automatically after about a second.

When two timer settings overlap
If two timer settings are preset as in the following example, the recording of the event 2 will begin before the first recording is completely finished. Consequently, the event 1 will be cut off in the middle of its recording.



AFTER TIMER RECORDING

When a timer recording is finished, the setting (except the everyday or every week setting) will be eliminated and the next timer settings will move up one event position each. For example, if you have preset 4 events, when the first timer recording is finished, the fourth event position will be vacant. If the TIMER SET button is pressed. "4" will appear in the window.

When a power interruption occurs

If the clock shows "0 : 00" blinking, the power has been interrupted for more than 30 minutes (when the built-in battery has been charged at least 48 hours) and all the timer settings will have been erased. Reset the clock and the timer settings.

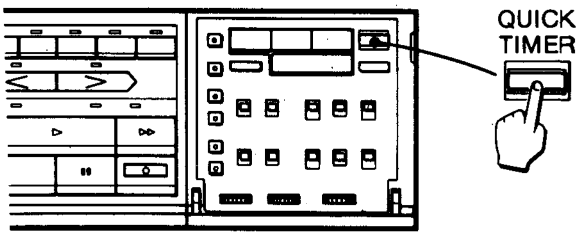
If the power has been interrupted for less than 30 minutes, the timer settings are retained in the memory and the on-going timer recording will resume when the power is resupplied.

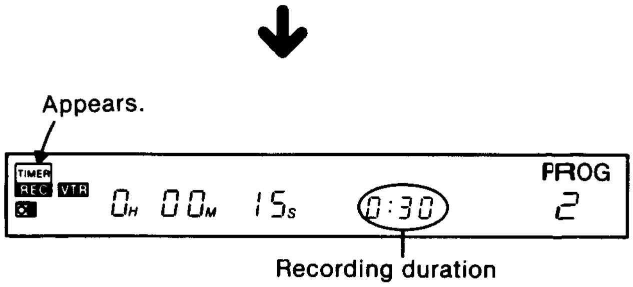
QUICK TIMER RECORDING

—To set the recording duration and to turn off the unit automatically

During recording, you can set the recording duration for up to 4 hours in units of 30 minutes by pressing the QUICK TIMER button. After the preset timer has elapsed, recording stops and recorder is turned off automatically.

1 Start recording.
2 Press the QUICK TIMER button to set the recording duration.
The TIMER REC indicator will appear.





Each time you press the QUICK TIMER button, the indication changes:
0 : 30 → 1 : 00 → 1 : 30 → 2 : 00 → ... 3 : 30 → 4 : 00

As the recording continues, the duration indication decreases minute by minute to 0 : 00 and the recording stops. The recorder is turned off automatically.

To extend the recording duration
The on-going recording duration can be extended simply by pressing the QUICK TIMER button.
The duration will be extended in units of 30 minutes with each pressing.
Example: When 2:25 is indicated,
2:25 → 2:30 → 3:00

To cancel the quick timer function
Press the TIMER REC ON/OFF button so that the TIMER REC indicator goes off. The recorder will be turned off automatically after about a second.

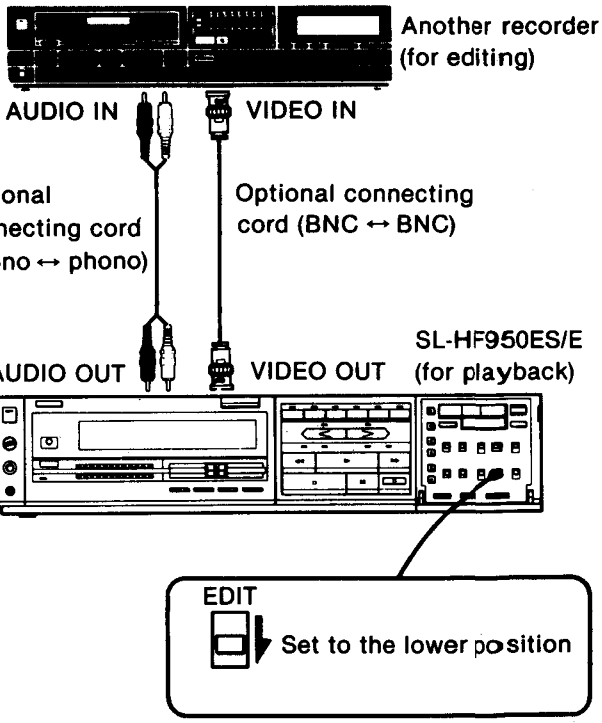
To stop quick timer recording momentarily
Press the ❚❚ PAUSE button. To resume recording, press the same button again.

Note
During quick timer recording, only the QUICK TIMER, ❚❚ PAUSE and TIMER REC ON/OFF buttons can be activated. To activate the other buttons, press the TIMER REC ON/OFF button so that the TIMER REC indicator goes off.

1-11. TAPE EDITING

To edit a tape, you will need two video recorders: one is to play back the original tape and the other is to record. To make the most of this unit's excellent editing performance, using this unit for playback is recommended.

CONNECTIONS


Another recorder (for editing)
AUDIO IN
VIDEO IN
Optional connecting cord (phono ↔ phono)
Optional connecting cord (BNC ↔ BNC)
AUDIO OUT
VIDEO OUT
SL-HF950ES/E (for playback)
EDIT
Set to the lower position

OPERATION

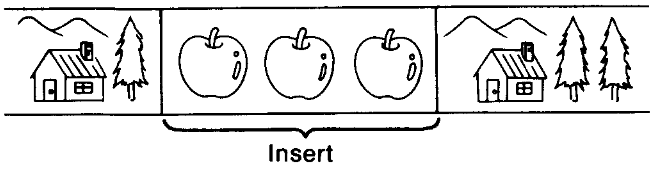
Set the INPUT SELECT switch of the recorder for editing to LINE (line input), if provided.
Set the recorder for playback to playback mode, and the recorder for editing to record mode.

EDIT switch
Generally, a recorder electrically rectifies the original signals recorded on a tape for optimum viewing on a TV or monitor. However, this rectification is not needed and even result in over-rectification, when the signal is being recorded onto a tape in another recorder. When the EDIT switch is set to the lower position, the rectification circuit is cancelled. This allows direct recording of the original signal onto the tape in another recorder.

CAUTION
Television programmes, films, video tapes and other materials may be copyrighted. Unauthorized duplication of such material may be contrary to the provision of the copyright laws.

AUDIO AND VIDEO INSERT

By using the INSERT buttons, you can easily "insert" (re-record) new sound or picture onto a pre-recorded tape.

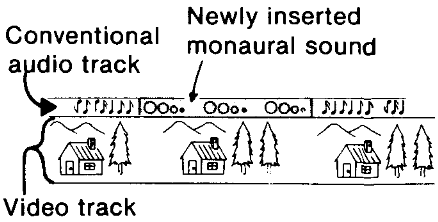
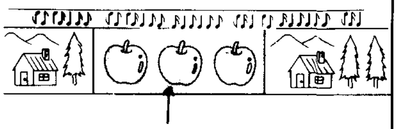
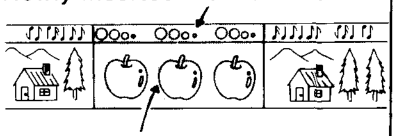


Audio insert—Inserting new sound (monaural) on the conventional audio track without erasing the original picture and Beta hi-fi sound on the video track

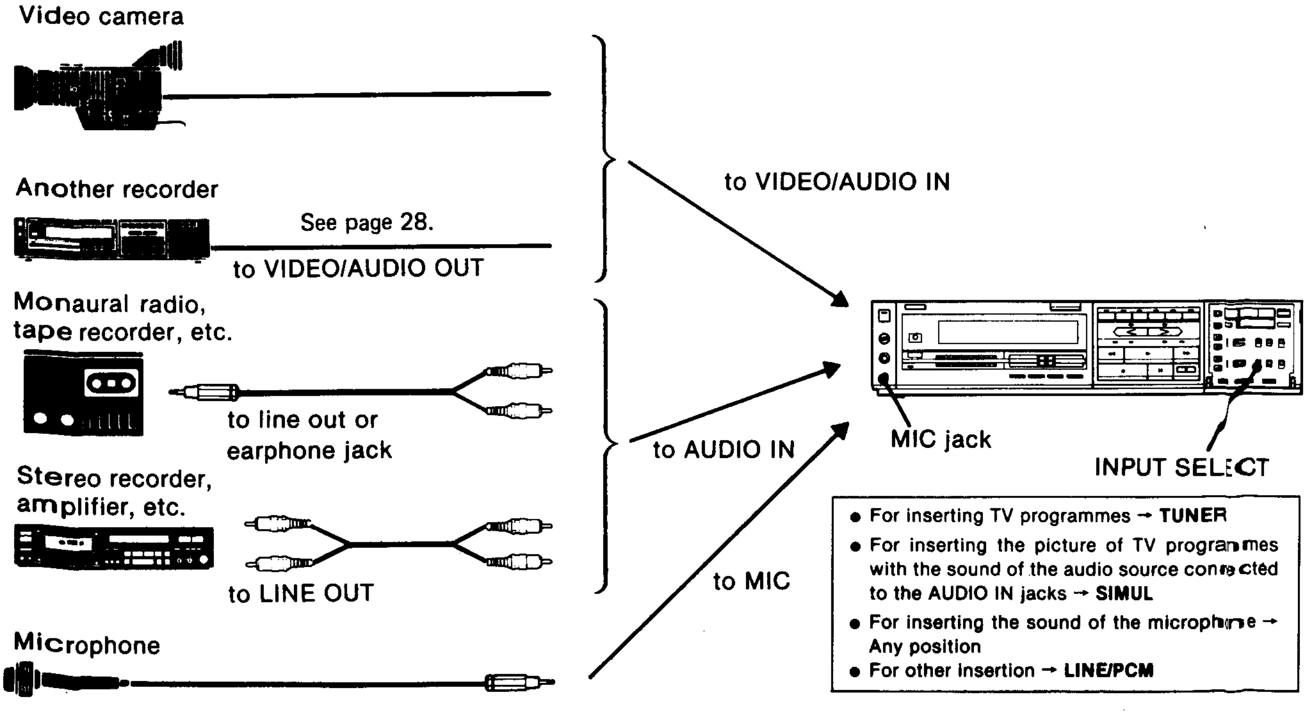
Video insert—Inserting new picture and/or Beta hi-fi sound without erasing the original sound on the conventional audio track

Audio and video insert—Inserting new sound and picture onto both the video and conventional audio tracks

The recording after audio, video or audio/video insertion

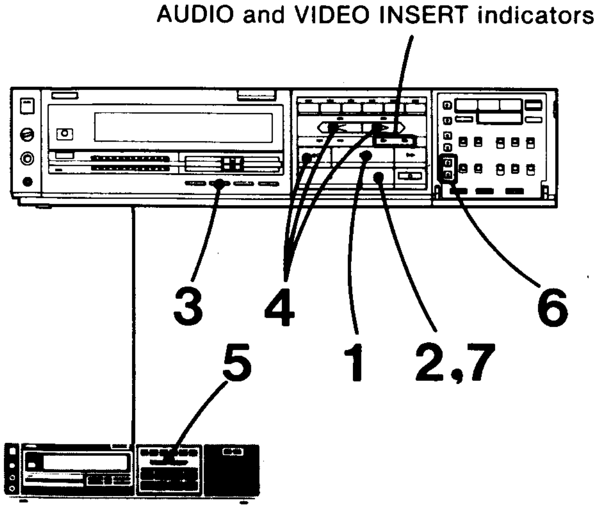
Audio insert	 Conventional audio track Newly inserted monaural sound Video track
Video insert	 Newly inserted picture and/or Beta hi-fi sound
Audio and video insert	Newly inserted monaural sound  Newly inserted picture and/or Beta hi-fi sound

AUDIO AND VIDEO SOURCE CONNECTION


Video camera
Another recorder
See page 28.
to VIDEO/AUDIO OUT
Monaural radio, tape recorder, etc.
to line out or earphone jack
Stereo recorder, amplifier, etc.
to LINE OUT
Microphone
to VIDEO/AUDIO IN
to AUDIO IN
to MIC
MIC jack
INPUT SELECT

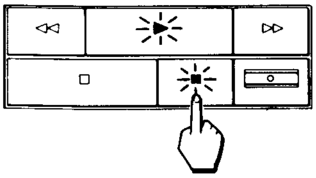
- For inserting TV programmes → **TUNER**
- For inserting the picture of TV programmes with the sound of the audio source connected to the AUDIO IN jacks → **SIMUL**
- For inserting the sound of the microphone → Any position
- For other insertion → **LINE/PCM**

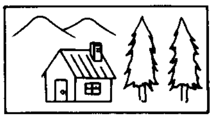
OPERATION


AUDIO and VIDEO INSERT indicators
3
4
6
5
1
2,7

1 Play back the original tape on which you want to make insertion.

2 At the point where you want to stop the insertion, press the ▮▮ PAUSE button.

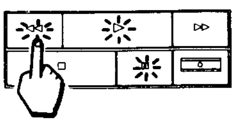


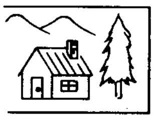


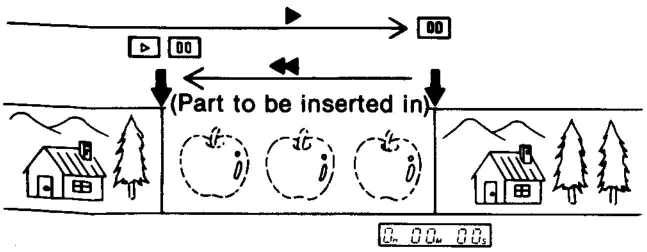
If necessary, press the > FWD or REV < button to locate the point accurately, then press the ▮▮ PAUSE button.

3 Press the COUNTER RESET button.
The time counter will be reset to "0H00M00S".

4 Using the ◀◀ REW button and the > FWD and REV < buttons, locate the point where you want to start the insertion, and set the recorder to playback pause mode.



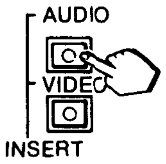



▶
◀◀
(Part to be inserted in)
0H 00M 00S

5 Play the audio and/or video source.

6 For "Audio insert", press the AUDIO INSERT button.
For "Video insert", press the VIDEO INSERT button.
For "Audio and video insert", press the AUDIO and VIDEO INSERT buttons.
The corresponding AUDIO and/or VIDEO INSERT indicators will light.

AUDIO-INSERT-VIDEO


AUDIO
VIDEO
INSERT

7 Press the ▮▮ PAUSE button. The audio and/or video insert will start.

At the "0H00M00S" point on the counter, the insertion will stop.

To stop insertion momentarily, press the ▮▮ PAUSE button. To resume insertion, press the same button again.

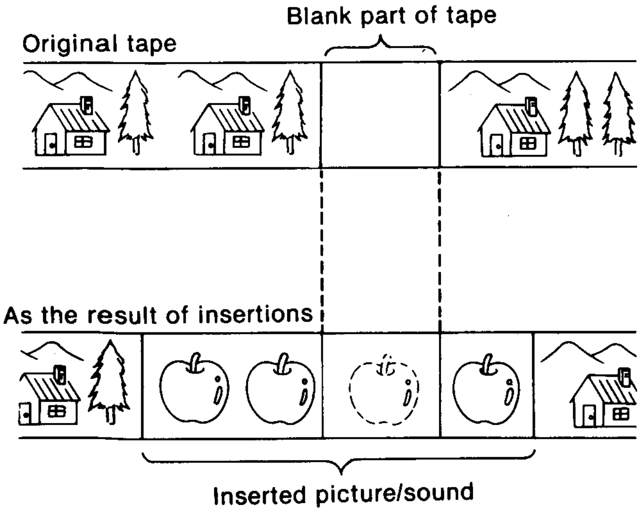
To stop the on-going insertion, press the ■ STOP button.

Monitoring the sound being inserted

- During audio/video insertion, the sound to be listened to can be selected by setting the BETA HI-FI selector and the AUDIO NONITOR selector to the desired position.
- For the sound from the microphone, set the BETA HI-FI selector to NORMAL and listen to the sound through headphones.

Notes

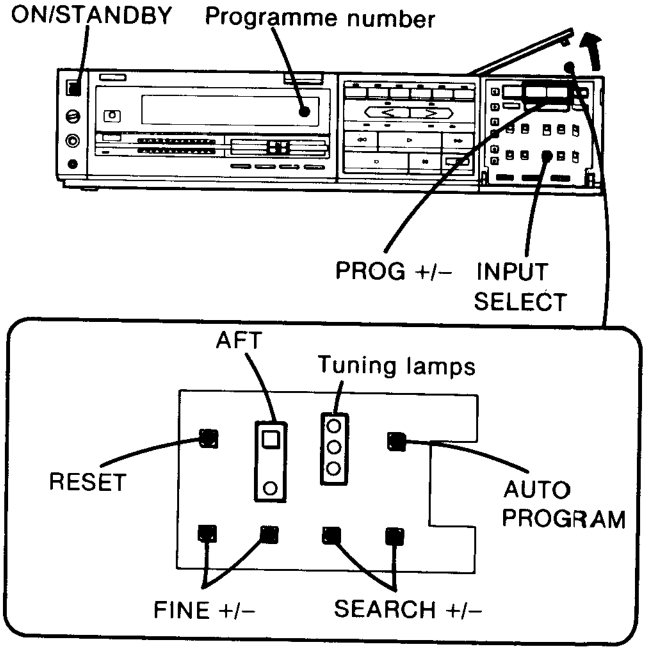
- During insertion, the ● RECORD, ▶ PLAY, ◀◀ REW, ▶▶ FF, FRAME and variable speed playback buttons will not function.
- If a microphone is connected to the MIC jack, the sound from the microphone will always be recorded on the conventional audio track.
- If the safety tab of the cassette has been removed, the cassette will be ejected automatically when the INSERT button is pressed.
- If the video and/or audio insertions are made on the blank space on the original tape, this part will be muted in normal or double-speed playback mode, as there is no control signal recorded.



1-12. TV STATION PROGRAMMING

Automatic and manual programming are available. Automatic programming automatically presets receivable stations from the lowest frequency to the highest. Manual programming is useful for presetting selected stations in any desired sequence.

To start programming, turn on the recorder by pressing the ON/STANDBY switch and set the INPUT SELECT switch to TUNER.



AUTOMATIC PROGRAMMING

Press the AUTO PROGRAM button. Up to 30 receivable stations will be preset one by one from programme position 1. When no more stations can be located, programme number " 1 " will light on the programme indicator and automatic programming will stop.

MANUAL PROGRAMMING

1 Press the + or − PROG button to select the programme position.
   + for a higher-numbered programme position
   − for a lower-numbered programme position

2 Press the + SEARCH button to locate a station with higher frequency and the − SEARCH button to locate a station with lower frequency.
   When a station has been received, the search will stop. Press the + or − SEARCH button again, until the desired station is received.

Repeat these steps for all desired stations.

FINE TUNING OF A WEAK STATION

If the picture on a particular programme position is not acceptable, keep the + or – FINE button pressed until the picture becomes clearer. When either of the FINE buttons is pressed, the AFT of the selected station is deactivated and the AFT lamp goes off. To view this particular station, keep the AFT deactivated. (Do not press the AFT button.)
When other memorized stations are selected, the AFT automatically activates.

ELIMINATING NOISE ON UNUSED PROGRAMME POSITIONS

Simply press the RESET button. The annoying noise will be eliminated.

Tuning lamps
The tuning lamp lights to show the current tuning band.
V_L : E2 - E4, E5 - E12 and Cable TV S1 and S2
V_H : Cable TV S3, M1 - M10 and U11 - U20 channels
U : E21 - E68 channels

Note: Cable TV channels are receivable on the SL-HF950ES only.

1-13. CLOCK SETTING

When you connect the mains lead to a mains outlet, the clock indicates "0:00" with the two dots blinking.

Time indication

AM			
12:00 (midnight)	1:00		11:00
↓ 0:00	↓ 1:00	.....	↓ 11:00

PM					
12:00 (noon)	1:00	2:00		10:00	11:00
↓ 12:00	↓ 13:00	↓ 14:00	.....	↓ 22:00	↓ 23:00

Day indication

MO (Monday)	TU (Tuesday)	WE (Wednesday)	TH (Thursday)	FR (Friday)	SA (Saturday)	SU (Sunday)
↓ 1	↓ 2	↓ 3	↓ 4	↓ 5	↓ 6	↓ 7

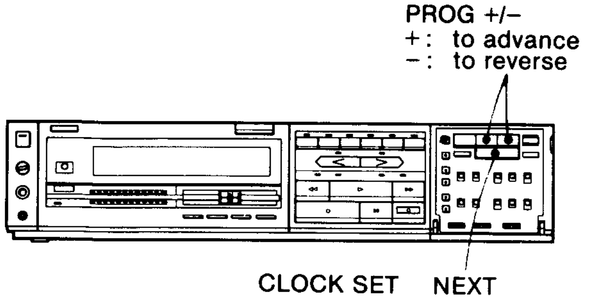
NEXT button
Each time the NEXT button is pressed, the item to be set blinks to let you know the setting order.

+/– buttons
The + and – PROG buttons can be pressed in two ways.

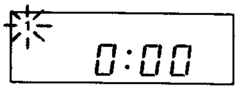
When you hold a button down, the digits will advance continuosly until the button is released.

When you press and immediately release a button, the digits will advance by one.

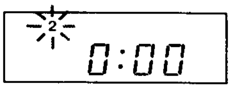
Example: To set the clock to 7:35 p.m. (19:35) on Tuesday



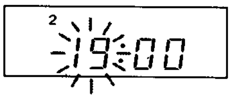
1 Press CLOCK SET for more than a second.



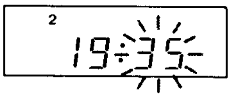
2 Set the day by pressing + or – PROG.



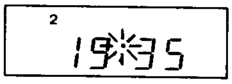
3 Press NEXT and set the hour by pressing + or – PROG.



4 Press NEXT and set the minute by pressing + or – PROG.



5 With an announced time signal, press NEXT.
The clock now starts operating, showing the correct time.



The dots of the colon alternately blink every 30 seconds.

Zero second adjustment
Press the CLOCK SET button quickly (for less than a second).
While the upper dot is blinking, the clock is set to the time displayed 00 second. For example, if the clock time is 19:35, it is set to 19:35, 00 second.
While the lower dot is blinking, the clock advances one minute and is set to the time displayed 00 second. For example, if the clock time is 19:35, it is set to 19:36, 00 second.

To change the actual clock setting
Press the CLOCK SET button for more than a second and repeat the clock setting procedure from step 1.

Note
If you have pressed the CLOCK SET button inadvertently, press the NEXT button enough times until the dots of the colon blink.

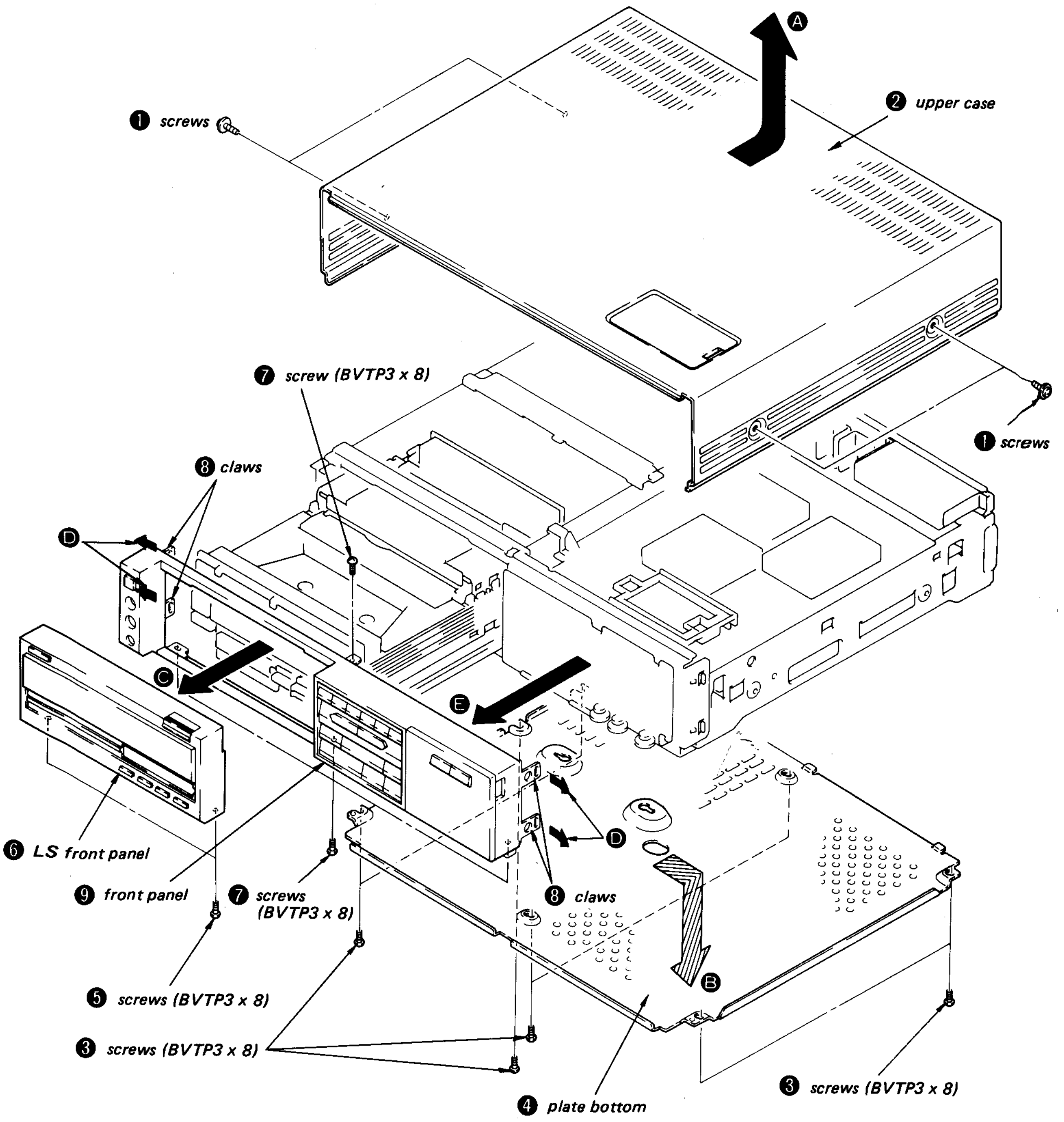
When the power has been interrupted for more than 30 minutes, the time indication " 0:00 " blinks, showing that the clock must be reset.
If the power has been interrupted for less than 30 minutes, the displayed time remains correct.

SECTION 2
DISASSEMBLY

2-1. DISASSEMBLY OF CABINET

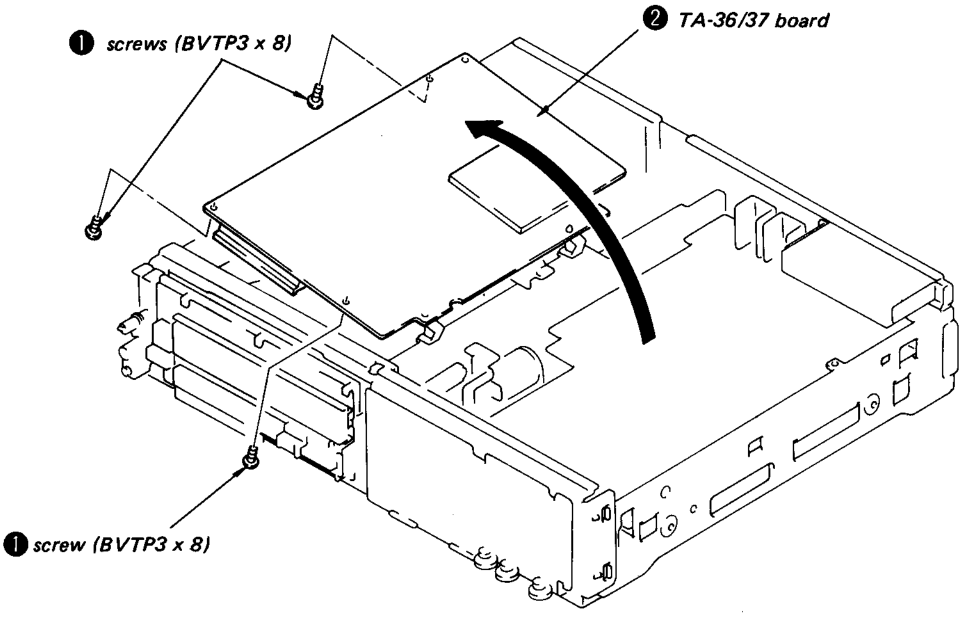
1) Remove the four case set screws ❶.
2) Remove the upper case ❷ in the direction shown by the arrow Ⓐ.
3) Loosen the seven screws ❸.
4) Remove the plate bottom ❹ in the direction shown by the arrow Ⓑ.
5) Remove the two screws (BVTP3 x 8) ❺.
6) Remove the LS front panel ❻ in the direction shown by the arrow Ⓒ.
7) Remove the four screws ❼.
8) Remove the four claws ❽ in the direction shown by the arrow Ⓓ, then remove the front panel ❾ in the direction shown by the arrow Ⓔ.

Note: Follow the disassembly procedure in the numerical order given.


Ⓐ
❷ upper case
❶ screws
❶ screws
❼ screw (BVTP3 x 8)
❽ claws
Ⓓ
Ⓒ
Ⓔ
❻ LS front panel
❾ front panel
❼ screws (BVTP3 x 8)
❽ claws
Ⓓ
❺ screws (BVTP3 x 8)
❸ screws (BVTP3 x 8)
Ⓑ
❹ plate bottom
❸ screws (BVTP3 x 8)

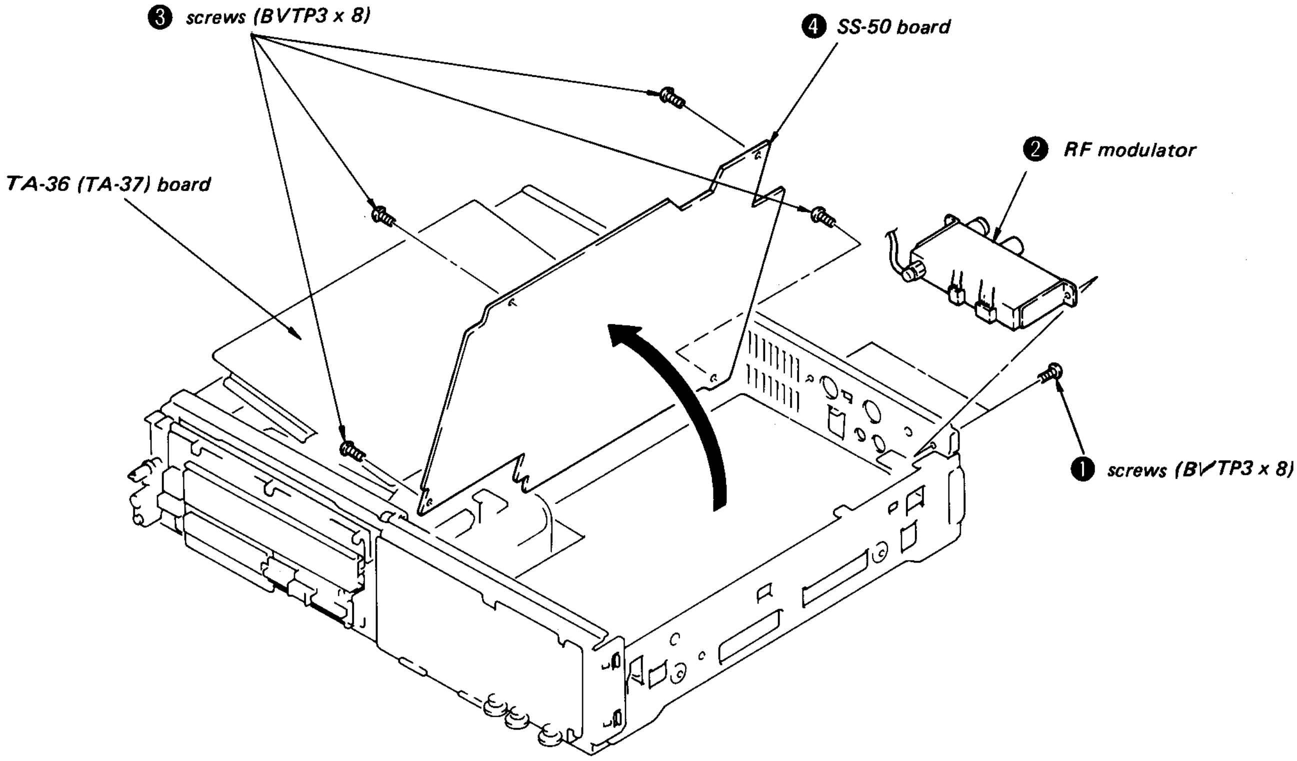
2-2. REMOVAL OF THE TA-36/37 BOARD

1) Remove the three screws (BVTP3 x 8) ❶.
2) Remove the TA-36/37 board ❷ in the direction shown by arrow.


❷ TA-36/37 board
❶ screws (BVTP3 x 8)
❶ screw (BVTP3 x 8)

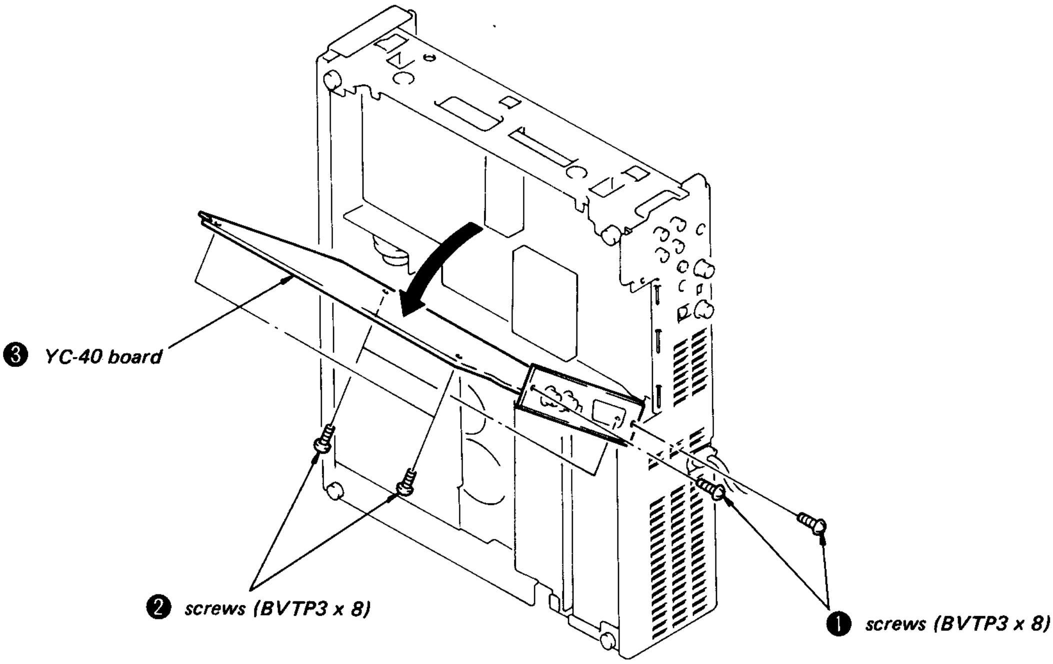
2-3. REMOVAL OF THE SS-50 BOARD

1) Remove the TA-36/37 board. (Refer to section 2-2. REMOVAL OF THE TA-36/37 BOARD.)
2) Remove the two screws (BVTP3 x 8) ❶.
3) Remove the RF modulator ❷.
4) Remove the four screws ❸.
5) Remove the SS-50 board ❹ in the direction shown by the arrow.


❸ screws (BVTP3 x 8)
❹ SS-50 board
❷ RF modulator
TA-36 (TA-37) board
❶ screws (BVTP3 x 8)

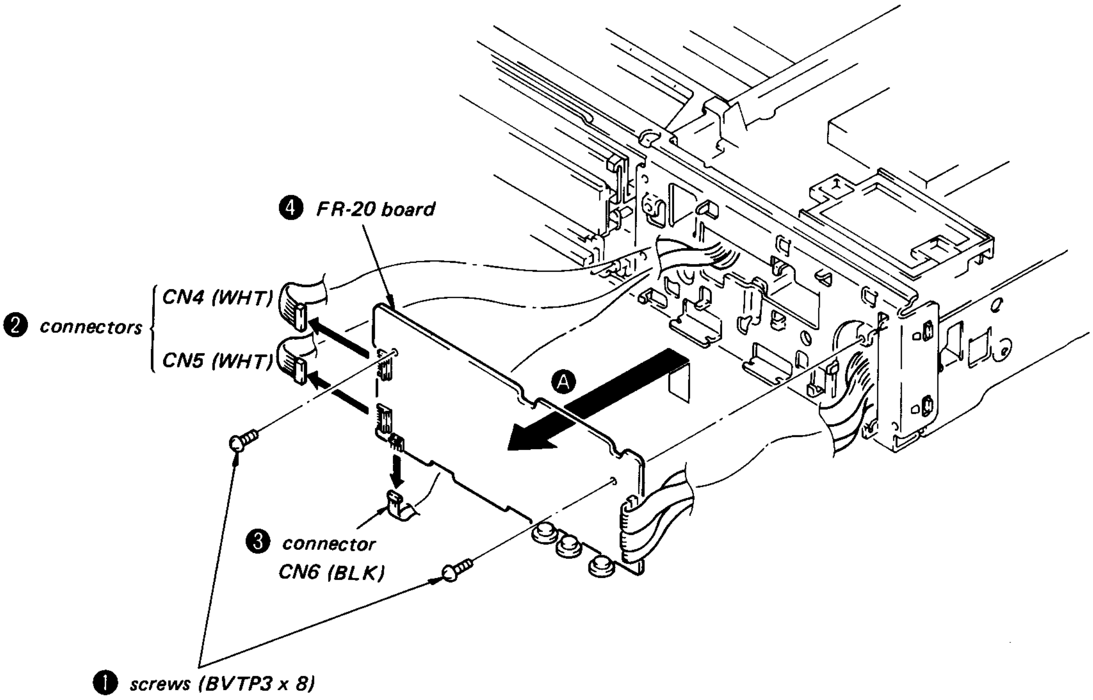
2-4. REMOVAL OF THE YC-40 BOARD

1) Stand the set with the left side panel on the bottom.
2) Remove the two screws (BVTP3 x 8) ❶.
3) Remove the four screws (BVTP3 x 8) ❷.
4) Remove the YC-40 board ❸ in the direction shown by the arrow.


❸ YC-40 board
❷ screws (BVTP3 x 8)
❶ screws (BVTP3 x 8)

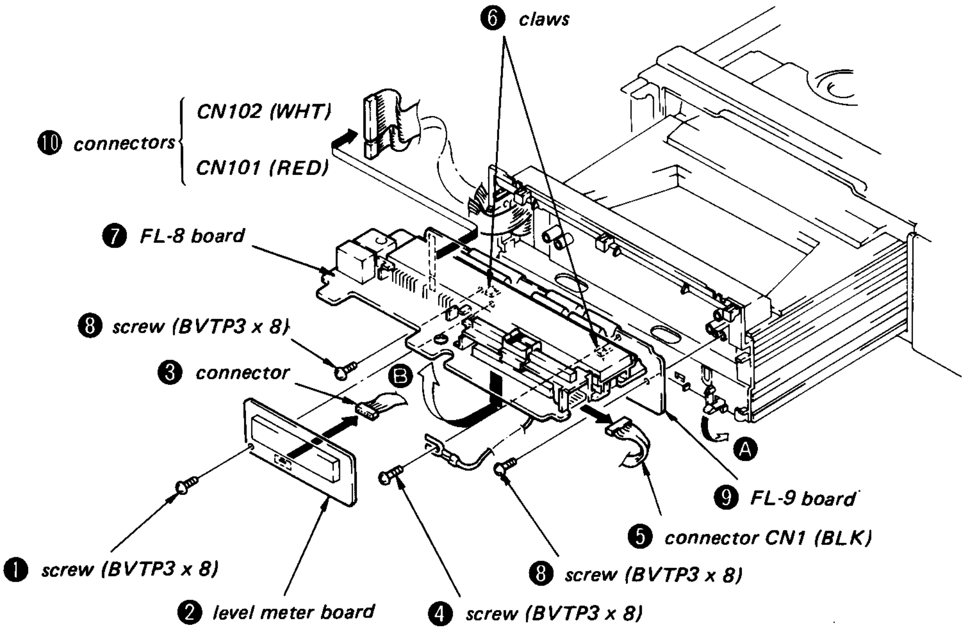
2-5. REMOVAL OF THE FR-20 BOARD

1) Remove the two screws (BVTP3 x 8) ❶.
2) Pull out the two connectors ❷.
3) Pull out the connector ❸.
4) Remove the FR-20 board ❹ in the direction shown by the arrow Ⓐ.


❹ FR-20 board
❷ connectors
CN4 (WHT)
CN5 (WHT)
Ⓐ
❸ connector
CN6 (BLK)
❶ screws (BVTP3 x 8)

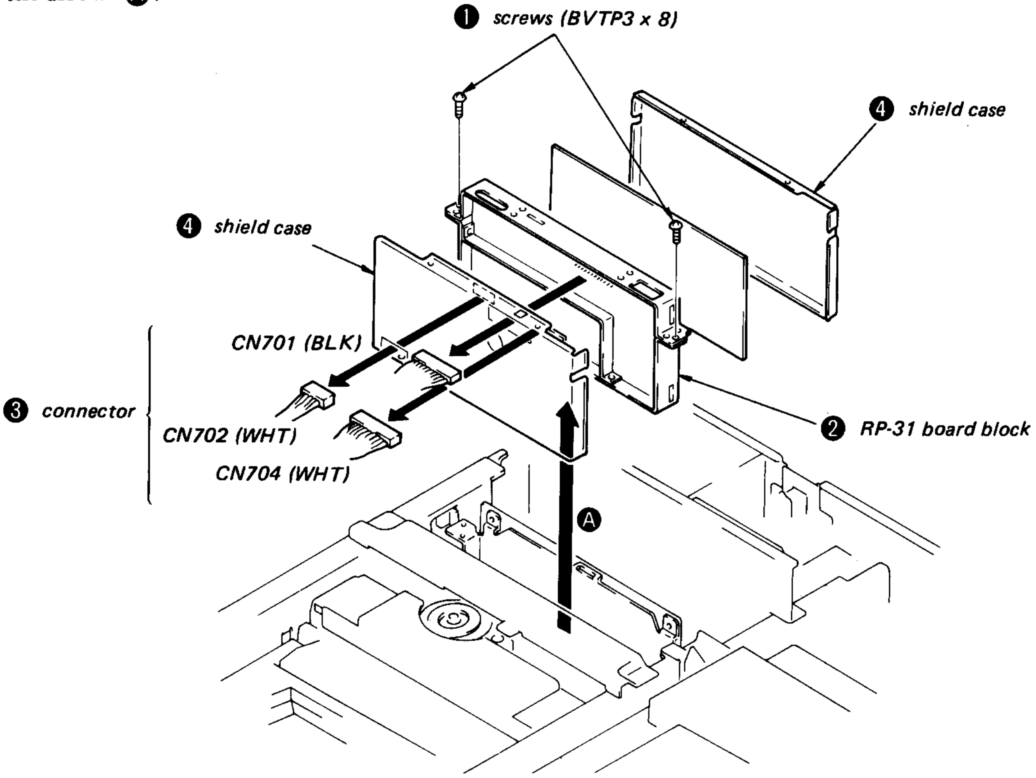
2-6. REMOVAL OF THE FL-8, FL-9 BOARD

1) Remove the one screw (BVTP3 x 8) ❶.
2) Remove the level meter board ❷.
3) Pull out the connector ❸.
4) Remove the one screw (BVTP3 x 8) ❹.
5) Pull out the connector ❺.
6) Remove the three claws ❻ in the direction shown by the arrow Ⓐ, then remove the FL-8 board ❼ in the direction shown by the arrow Ⓑ.
7) Remove the two screws (BVTP3 x 8) ❽.
8) Remove the FL-9 board ❾.
9) Pull out the two connectors ❿.


❻ claws
❿ connectors
CN102 (WHT)
CN101 (RED)
❼ FL-8 board
❽ screw (BVTP3 x 8)
❸ connector
Ⓑ
Ⓐ
❾ FL-9 board
❺ connector CN1 (BLK)
❶ screw (BVTP3 x 8)
❽ screw (BVTP3 x 8)
❷ level meter board
❹ screw (BVTP3 x 8)

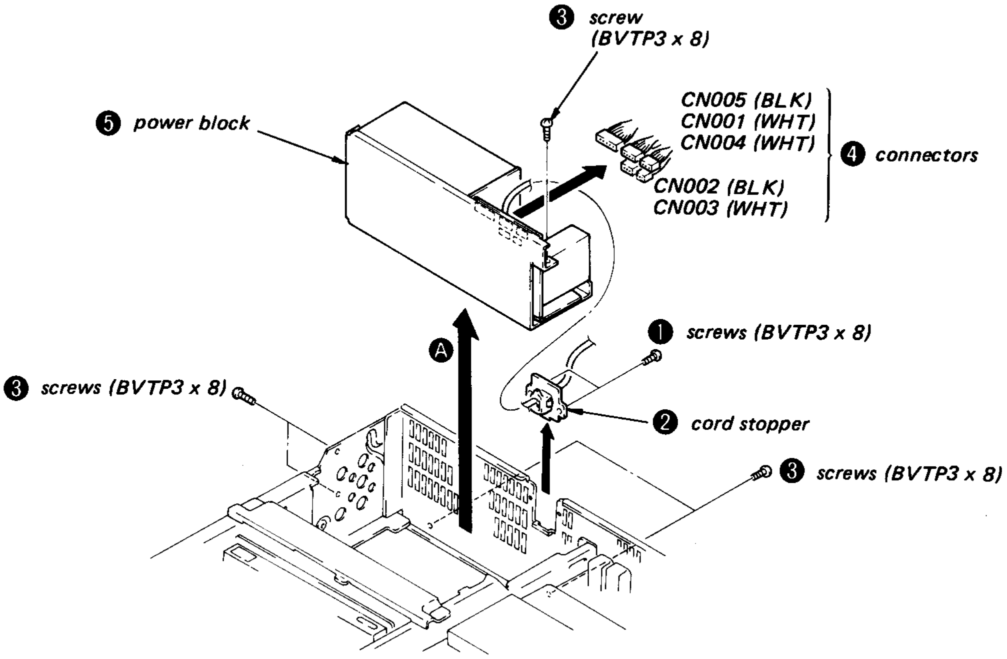
2-7. REMOVAL OF THE RP-31 BOARD

1) Remove the two screws (BVTP3 x 8) ❶.
2) Remove the RP-31 board block ❷ in the direction shown by the arrow Ⓐ.
3) Pull out the three connectors ❸.
4) Remove the two shield cases ❹.


❶ screws (BVTP3 x 8)
❹ shield case
❹ shield case
CN701 (BLK)
❸ connector
CN702 (WHT)
CN704 (WHT)
❷ RP-31 board block
Ⓐ

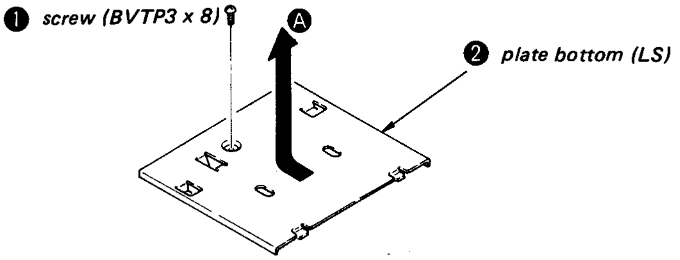
2-8. REMOVAL OF THE POWER BLOCK

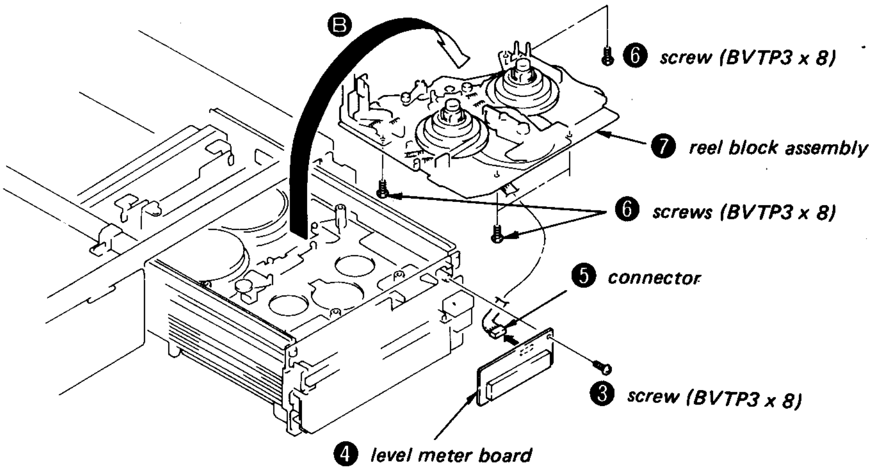
1) Remove the two screws (BVTP3 x 8) ❶.
2) Remove the cord stopper ❷.
3) Remove the five screws (BVTP3 x 8) ❸.
4) Pull out the five connectors ❹.
5) Remove the power block ❺ in the direction shown by the arrow Ⓐ.


❸ screw (BVTP3 x 8)
❺ power block
CN005 (BLK)
CN001 (WHT)
CN004 (WHT)
CN002 (BLK)
CN003 (WHT)
❹ connectors
❶ screws (BVTP3 x 8)
Ⓐ
❸ screws (BVTP3 x 8)
❷ cord stopper
❸ screws (BVTP3 x 8)

2-9. REMOVAL OF THE REEL BLOCK ASSEMBLY

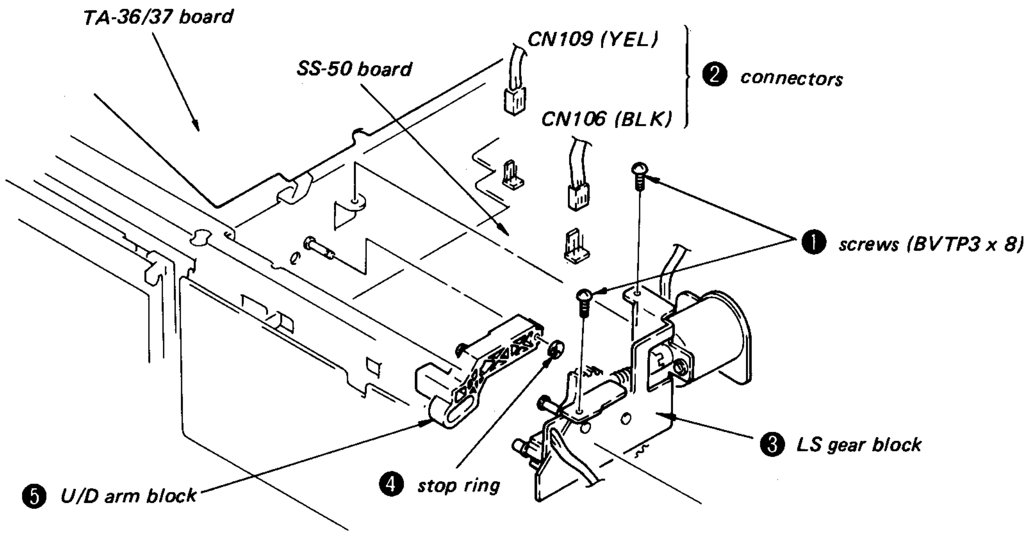
1) Place the set upside down.
2) Remove the one screw (BVTP3 x 8) ❶.
3) Remove the plate bottom (LS) ❷ in the direction shown by the arrow Ⓐ.
4) Remove the one screw (BVTP3 x 8) ❸.
5) Remove the level meter board ❹.
6) Pull out the connector ❺.
7) Remove the four screws (BVTP3 x 8) ❻.
8) Remove the reel block assembly ❼ in the direction shown by the arrow Ⓑ.


❶ screw (BVTP3 x 8)
Ⓐ
❷ plate bottom (LS)


Ⓑ
❻ screw (BVTP3 x 8)
❼ reel block assembly
❻ screws (BVTP3 x 8)
❺ connector
❸ screw (BVTP3 x 8)
❹ level meter board

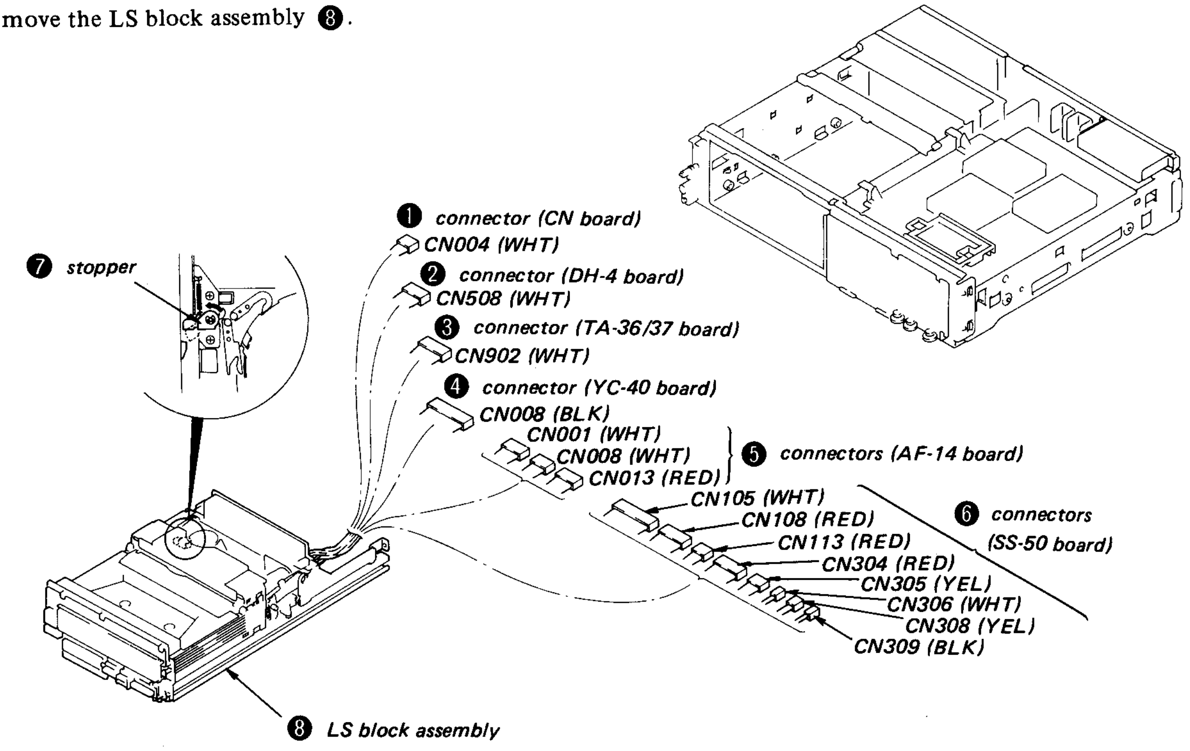
2-10. REMOVAL OF THE LS BLOCK ASSEMBLY (1)

1) Remove the TA-36/37 board.
   (Refer to section 2-2. REMOVAL OF THE TA36/37 BOARD.)
2) Remove the two screws (BVTP3 x 8) ❶.
3) Pull out the two connectors ❷ from the SS-50 board.
4) Remove the LS gear block ❸.
5) Remove the stop ring ❹.
6) Remove the U/D arm block ❺.


TA-36/37 board
SS-50 board
CN109 (YEL)
❷ connectors
CN106 (BLK)
❶ screws (BVTP3 x 8)
❸ LS gear block
❹ stop ring
❺ U/D arm block

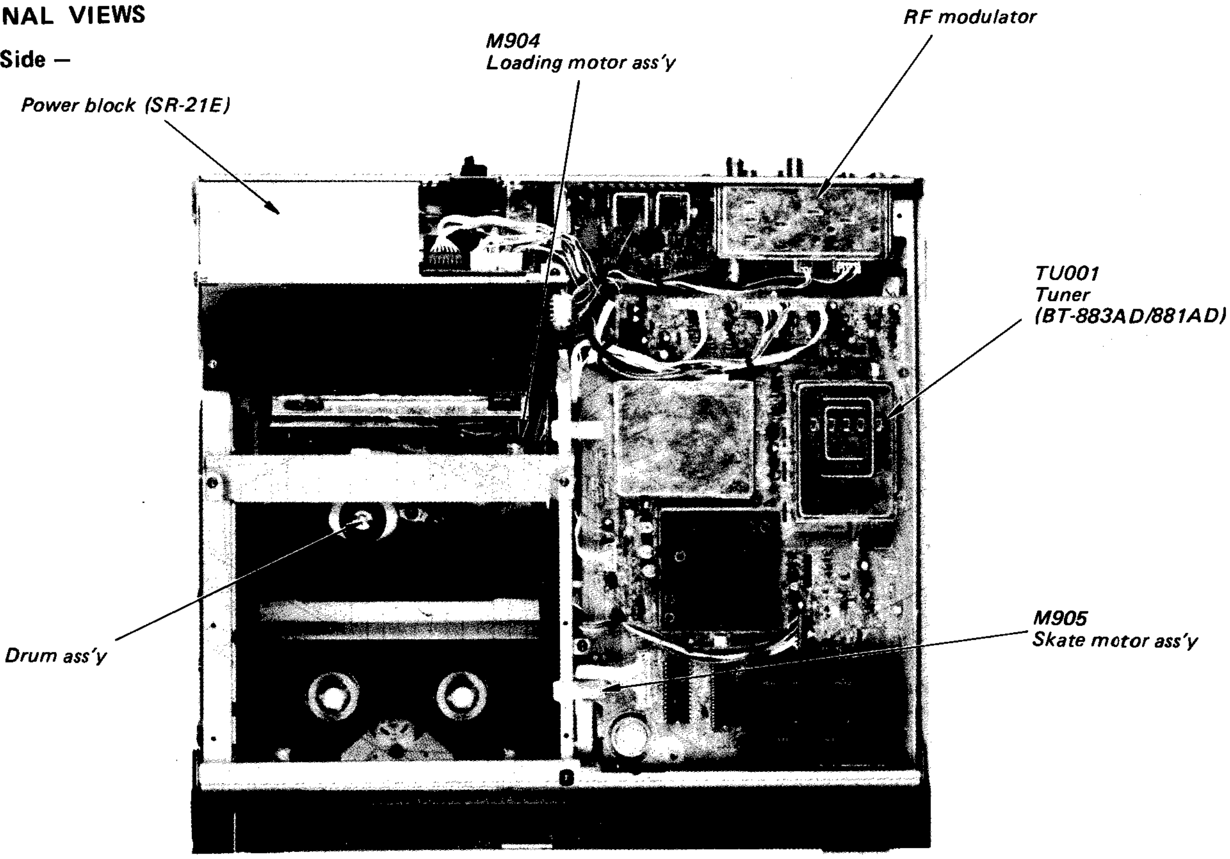
2-11. REMOVAL OF THE LS BLOCK ASSEMBLY (2)

1) Pull out the fifteen connectors ❶ ~ ❻.
2) Turn the stopper ❼ in the direction shown by the arrow.
3) Remove the LS block assembly ❽.

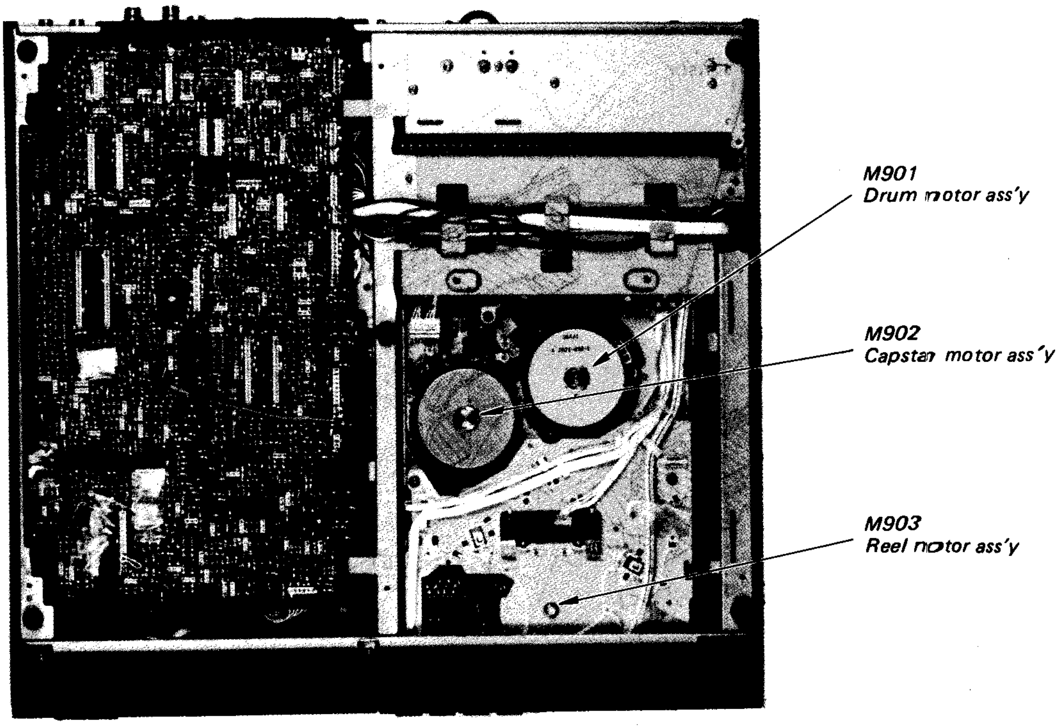

❼ stopper
❶ connector (CN board)
CN004 (WHT)
❷ connector (DH-4 board)
CN508 (WHT)
❸ connector (TA-36/37 board)
CN902 (WHT)
❹ connector (YC-40 board)
CN008 (BLK)
CN001 (WHT)
CN008 (WHT)
CN013 (RED)
❺ connectors (AF-14 board)
CN105 (WHT)
CN108 (RED)
CN113 (RED)
CN304 (RED)
CN305 (YEL)
CN306 (WHT)
CN308 (YEL)
CN309 (BLK)
❻ connectors (SS-50 board)
❽ LS block assembly

2-12. INTERNAL VIEWS

— Top Side —


Power block (SR-21E)
M904
Loading motor ass'y
RF modulator
TU001
Tuner
(BT-883AD/881AD)
Drum ass'y
M905
Skate motor ass'y

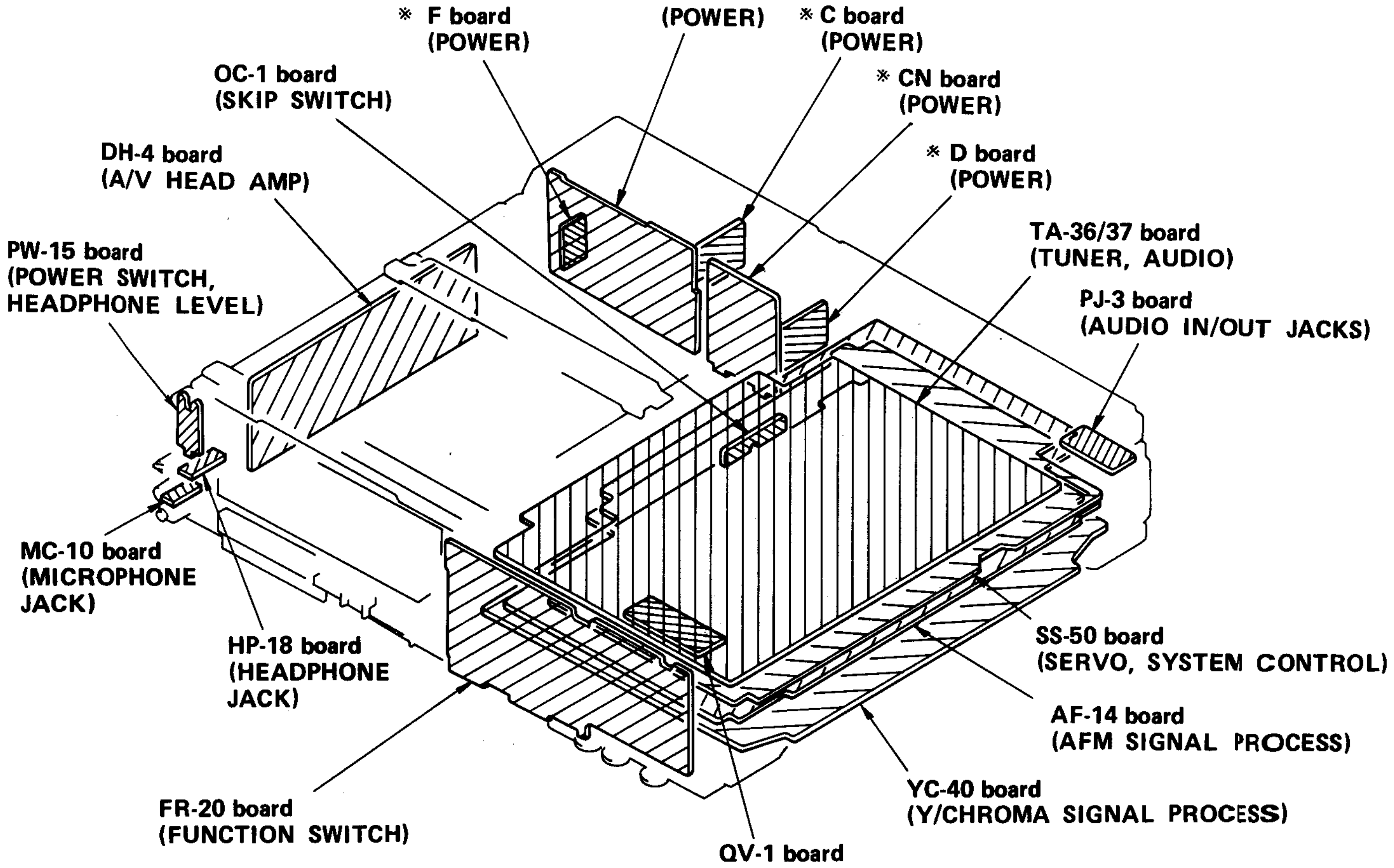
— Bottom Side —


M901
Drum motor ass'y
M902
Capstan motor ass'y
M903
Reel motor ass'y

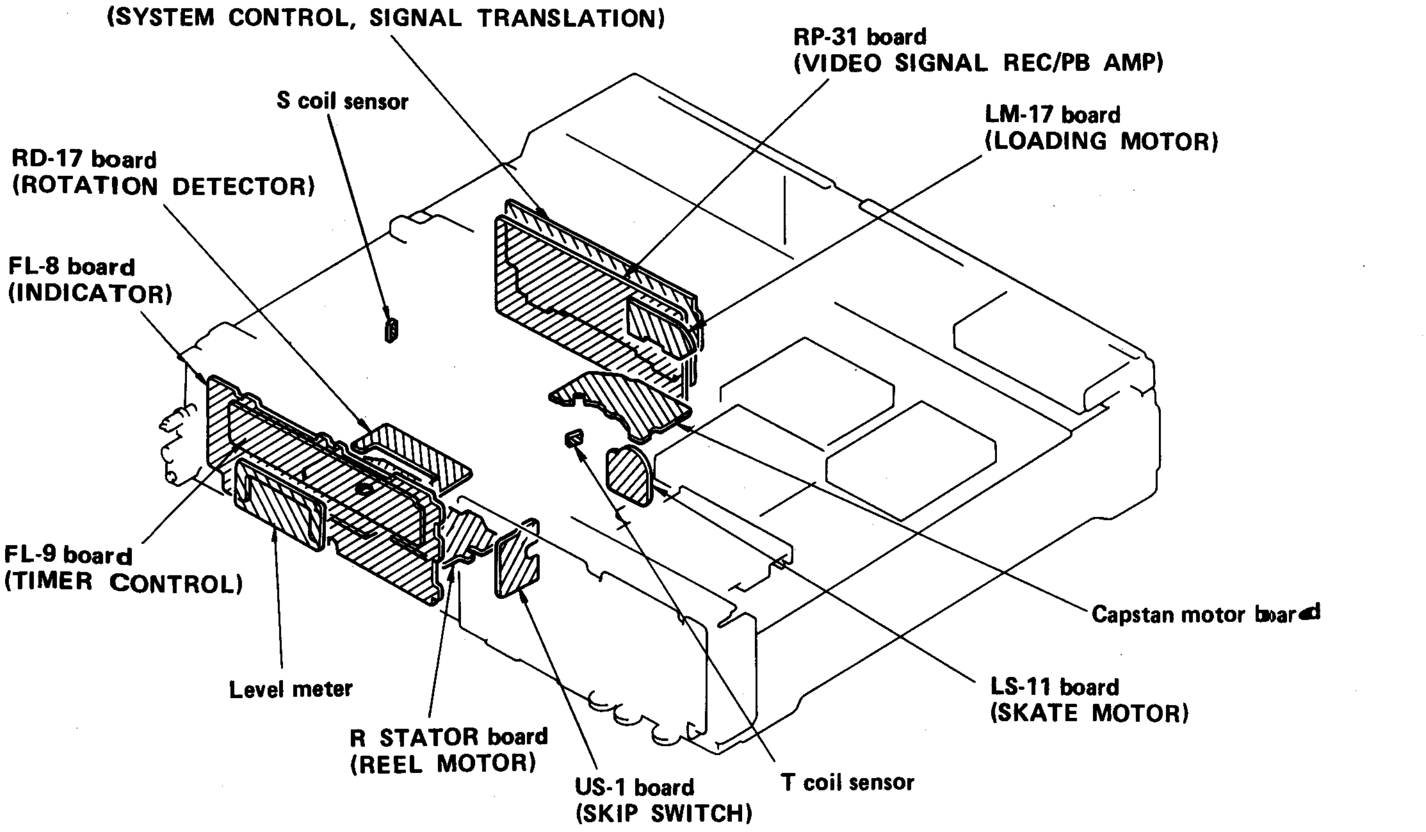
SECTION 3
DIAGRAMS

3-1. CIRCUIT BOARDS LOCATION

※ : POWER block SR-21E

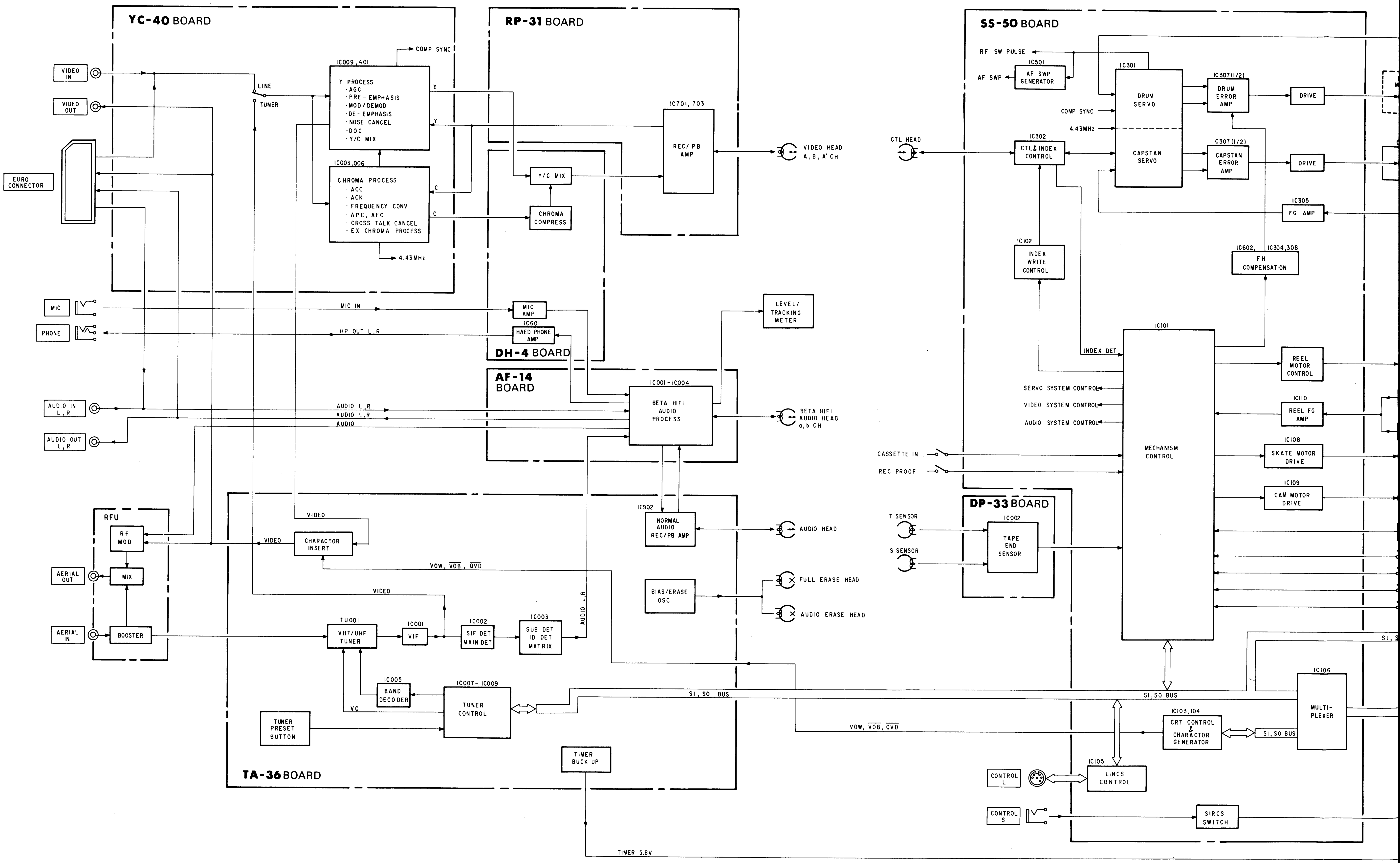


※ F board (POWER)
※ M board (POWER)
※ C board (POWER)
※ CN board (POWER)
※ D board (POWER)
OC-1 board (SKIP SWITCH)
DH-4 board (A/V HEAD AMP)
PW-15 board (POWER SWITCH, HEADPHONE LEVEL)
TA-36/37 board (TUNER, AUDIO)
PJ-3 board (AUDIO IN/OUT JACKS)
MC-10 board (MICROPHONE JACK)
HP-18 board (HEADPHONE JACK)
SS-50 board (SERVO, SYSTEM CONTROL)
AF-14 board (AFM SIGNAL PROCESS)
YC-40 board (Y/CHROMA SIGNAL PROCESS)
FR-20 board (FUNCTION SWITCH)
QV-1 board (SYSTEM CONTROL)

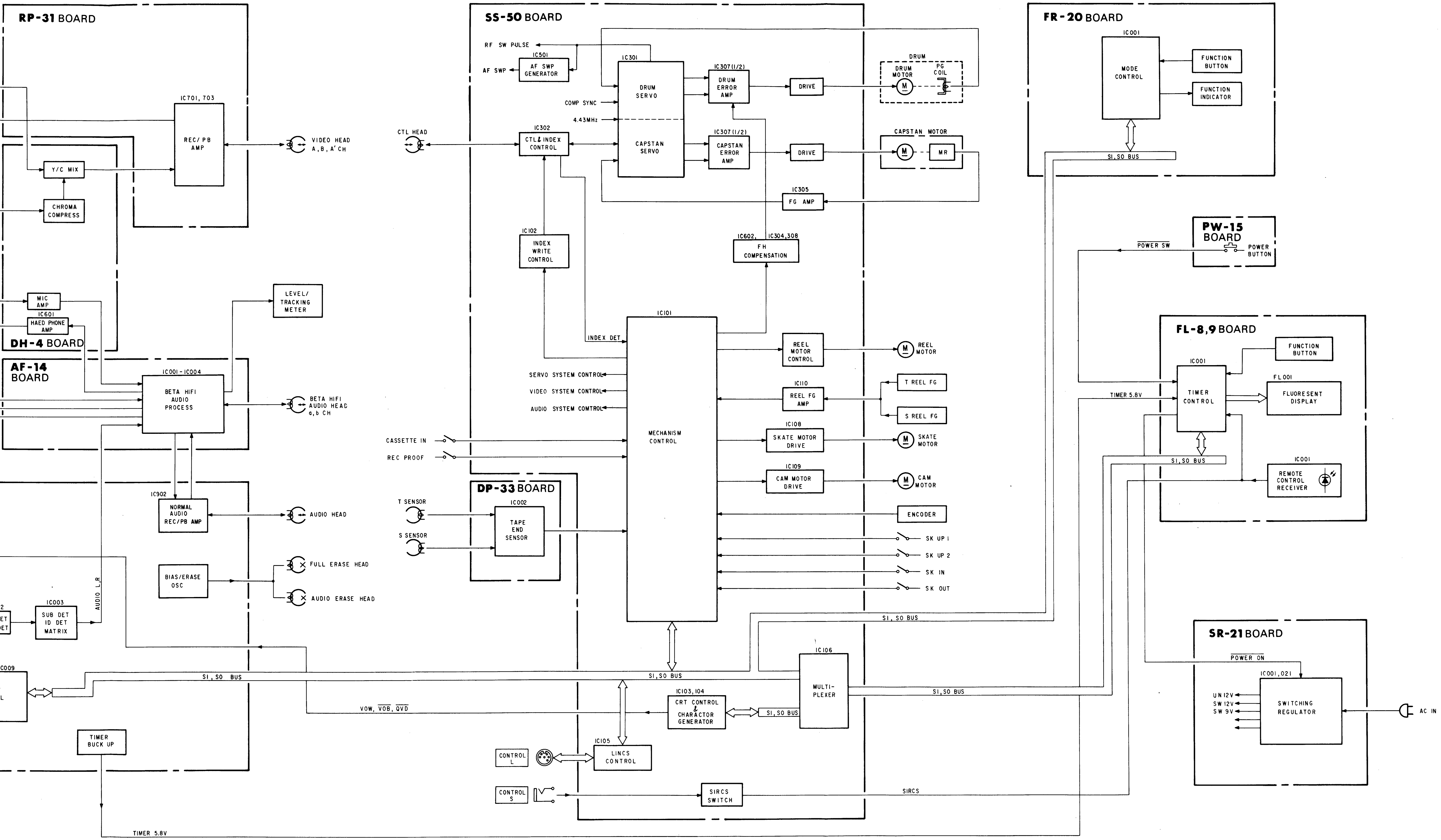


DR-33 board (SYSTEM CONTROL, SIGNAL TRANSLATION)
RP-31 board (VIDEO SIGNAL REC/PB AMP)
S coil sensor
LM-17 board (LOADING MOTOR)
RD-17 board (ROTATION DETECTOR)
FL-8 board (INDICATOR)
FL-9 board (TIMER CONTROL)
Capstan motor board
Level meter
LS-11 board (SKATE MOTOR)
R STATOR board (REEL MOTOR)
US-1 board (SKIP SWITCH)
T coil sensor

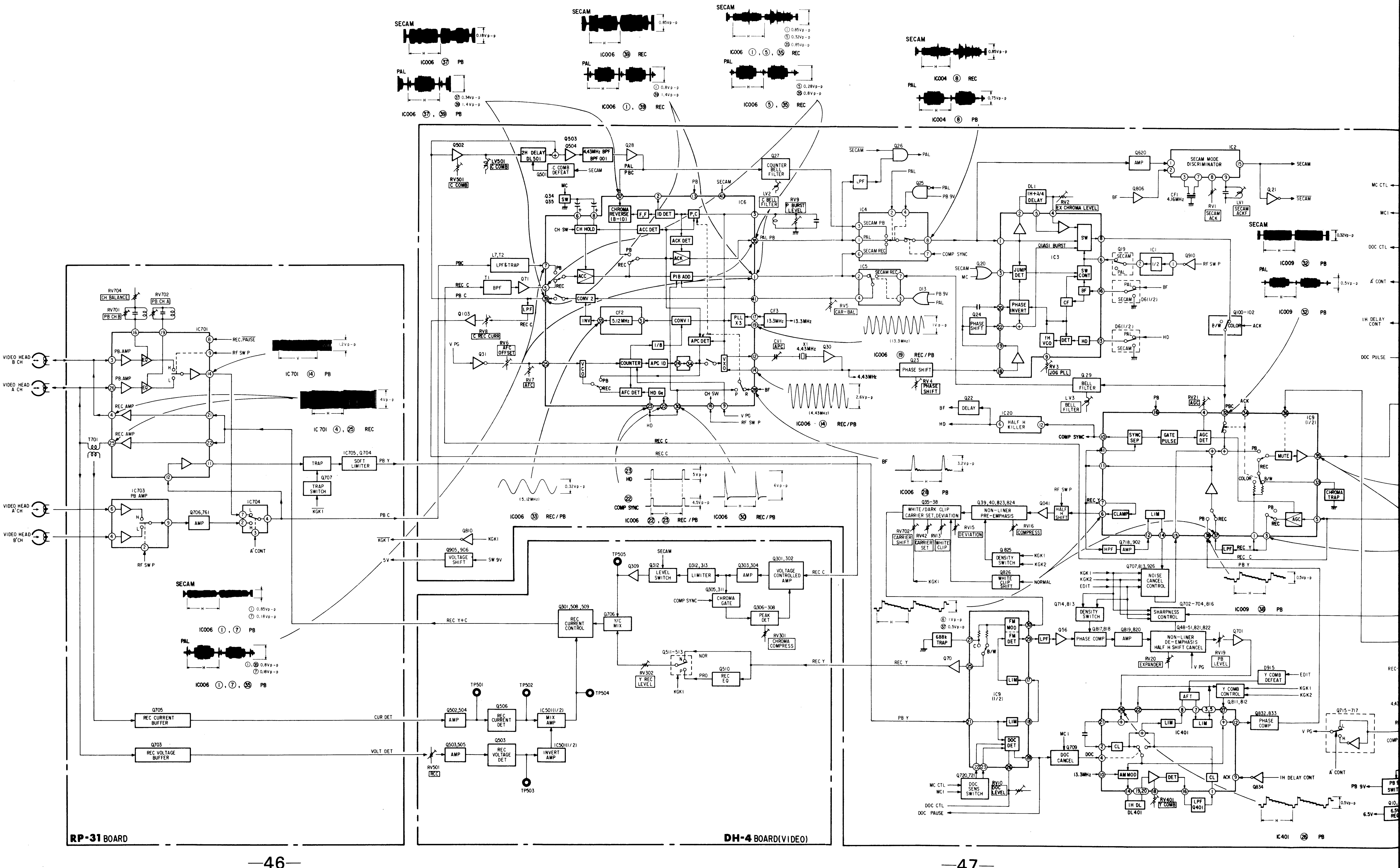
3-2. OVERALL BLOCK DIAGRAM

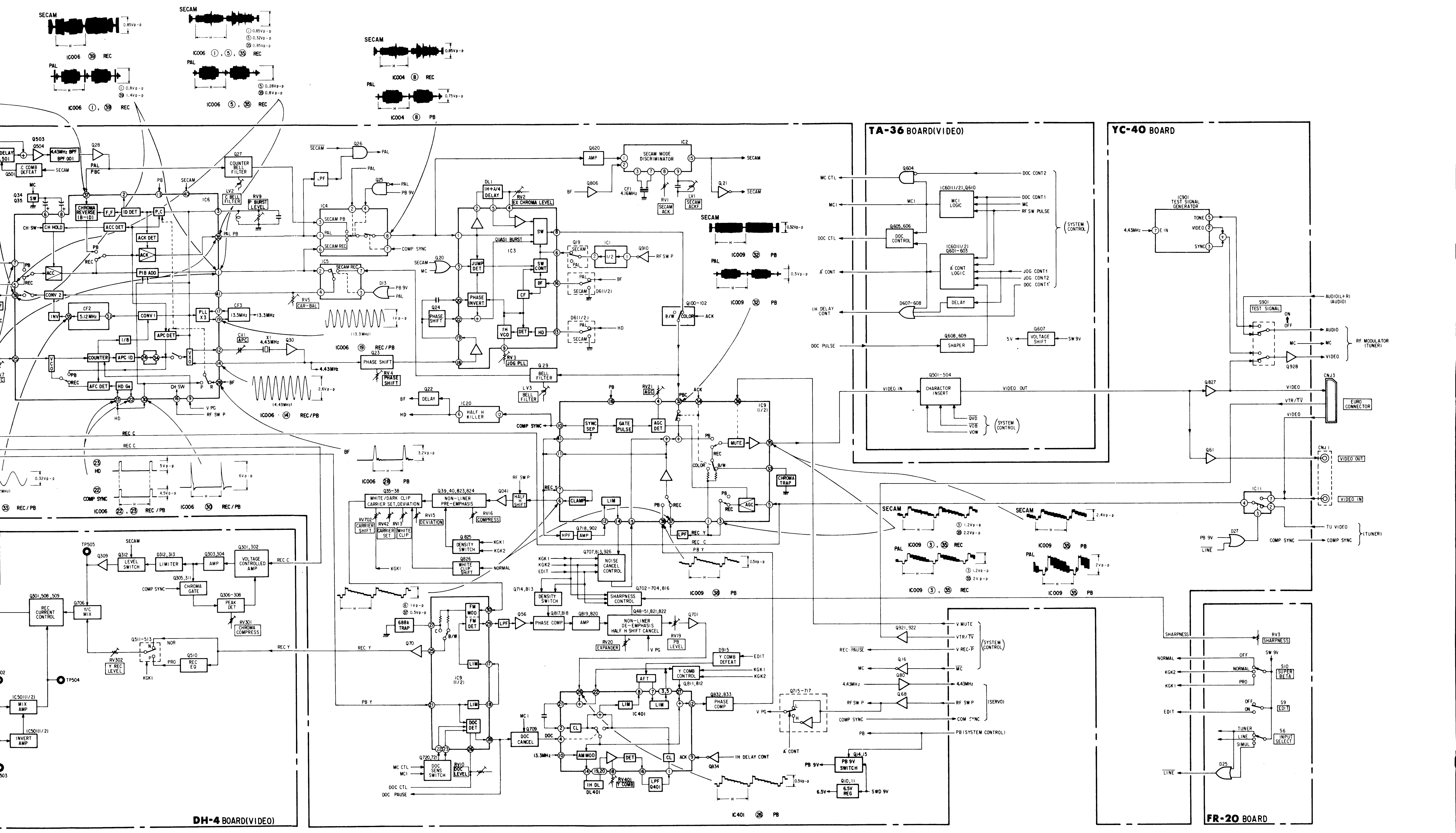


YC-40 BOARD
VIDEO IN
VIDEO OUT
EURO CONNECTOR
LINE
TUNER
IC009, 401
Y PROCESS
·AGC
·PRE-EMPHASIS
·MOD/DEMOD
·DE-EMPHASIS
·NOSE CANCEL
·DOC
·Y/C MIX
COMP SYNC
Y
Y
IC003, 006
CHROMA PROCESS
· ACC
· ACK
· FREQUENCY CONV
· APC, AFC
· CROSS TALK CANCEL
· EX CHROMA PROCESS
C
C
4.43MHz
RP-31 BOARD
IC701, 703
REC/PB AMP
Y/C MIX
CHROMA COMPRESS
VIDEO HEAD A, B, A' CH
MIC
PHONE
MIC IN
HP OUT L, R
MIC AMP
IC601
HAED PHONE AMP
DH-4 BOARD
LEVEL/ TRACKING METER
AF-14 BOARD
IC001-IC004
BETA HIFI AUDIO PROCESS
BETA HIFI AUDIO HEAD a, b CH
AUDIO IN L, R
AUDIO OUT L, R
AUDIO L, R
AUDIO L, R
AUDIO
RFU
RF MOD
MIX
BOOSTER
AERIAL OUT
AERIAL IN
VIDEO
VIDEO
CHARACTOR INSERT
VOW, VOB, QVD
VIDEO
IC902
NORMAL AUDIO REC/PB AMP
AUDIO HEAD
BIAS/ERASE OSC
FULL ERASE HEAD
AUDIO ERASE HEAD
TU001
VHF/UHF TUNER
IC001
VIF
IC002
SIF DET MAIN DET
IC003
SUB DET ID DET MATRIX
AUDIO L, R
IC005
BAND DECODER
VC
IC007-IC009
TUNER CONTROL
SI, SO BUS
TUNER PRESET BUTTON
TIMER BUCK UP
TA-36 BOARD
TIMER 5.8V
SS-50 BOARD
RF SW PULSE
IC501
AF SWP
AF SWP GENERATOR
IC301
DRUM SERVO
CAPSTAN SERVO
COMP SYNC
4.43MHz
IC307(1/2)
DRUM ERROR AMP
IC307(1/2)
CAPSTAN ERROR AMP
DRIVE
DRIVE
CTL HEAD
IC302
CTL & INDEX CONTROL
IC305
FG AMP
IC102
INDEX WRITE CONTROL
IC602, IC304, 308
FH COMPENSATION
INDEX DET
IC101
MECHANISM CONTROL
SERVO SYSTEM CONTROL
VIDEO SYSTEM CONTROL
AUDIO SYSTEM COMTROL
REEL MOTOR CONTROL
IC110
REEL FG AMP
IC108
SKATE MOTOR DRIVE
IC109
CAM MOTOR DRIVE
CASSETTE IN
REC PROOF
DP-33 BOARD
T SENSOR
S SENSOR
IC002
TAPE END SENSOR
SI, SO BUS
IC106
MULTI-PLEXER
SI, S
VOW, VOB, QVD
IC103, 104
CRT CONTROL & CHARACTOR GENERATOR
SI, SO BUS
IC105
LINCS CONTROL
CONTROL L
CONTROL S
SIRCS SWITCH


RP-31 BOARD
IC701, 703
REC/PB AMP
VIDEO HEAD A, B, A' CH
Y/C MIX
CHROMA COMPRESS
MIC AMP
IC601
HAED PHONE AMP
DH-4 BOARD
LEVEL/ TRACKING METER
AF-14 BOARD
IC001 - IC004
BETA HIFI AUDIO PROCESS
BETA HIFI AUDIO HEAD a, b CH
IC902
NORMAL AUDIO REC/PB AMP
AUDIO HEAD
BIAS/ERASE OSC
FULL ERASE HEAD
AUDIO ERASE HEAD
AUDIO L, R
IC003
SUB DET ID DET MATRIX
IC009
SI, SO BUS
VOW, VOB, QVD
TIMER BUCK UP
TIMER 5.8V
SS-50 BOARD
RF SW PULSE
IC501
AF SWP
AF SWP GENERATOR
IC301
DRUM SERVO
CAPSTAN SERVO
COMP SYNC
4.43MHz
IC307 (1/2)
DRUM ERROR AMP
CAPSTAN ERROR AMP
DRIVE
DRUM
DRUM MOTOR
PG COIL
M
CAPSTAN MOTOR
MR
IC305
FG AMP
CTL HEAD
IC302
CTL & INDEX CONTROL
IC102
INDEX WRITE CONTROL
IC602, IC304, 308
FH COMPENSATION
IC101
INDEX DET
SERVO SYSTEM CONTROL
VIDEO SYSTEM CONTROL
AUDIO SYSTEM COMTROL
MECHANISM CONTROL
REEL MOTOR CONTROL
REEL MOTOR
IC110
REEL FG AMP
T REEL FG
S REEL FG
IC108
SKATE MOTOR DRIVE
SKATE MOTOR
IC109
CAM MOTOR DRIVE
CAM MOTOR
ENCODER
SK UP 1
SK UP 2
SK IN
SK OUT
CASSETTE IN
REC PROOF
T SENSOR
S SENSOR
DP-33 BOARD
IC002
TAPE END SENSOR
IC106
MULTI-PLEXER
IC103, 104
CRT CONTROL & CHARACTOR GENERATOR
IC105
LINCS CONTROL
CONTROL L
CONTROL S
SIRCS SWITCH
SIRCS
FR-20 BOARD
IC001
MODE CONTROL
FUNCTION BUTTON
FUNCTION INDICATOR
PW-15 BOARD
POWER SW
POWER BUTTON
FL-8,9 BOARD
TIMER CONTROL
FL001
FLUORESENT DISPLAY
REMOTE CONTROL RECEIVER
TIMER 5.8V
SR-21 BOARD
POWER ON
IC001, 021
SWITCHING REGULATOR
UN 12V
SW 12V
SW 9V
AC IN

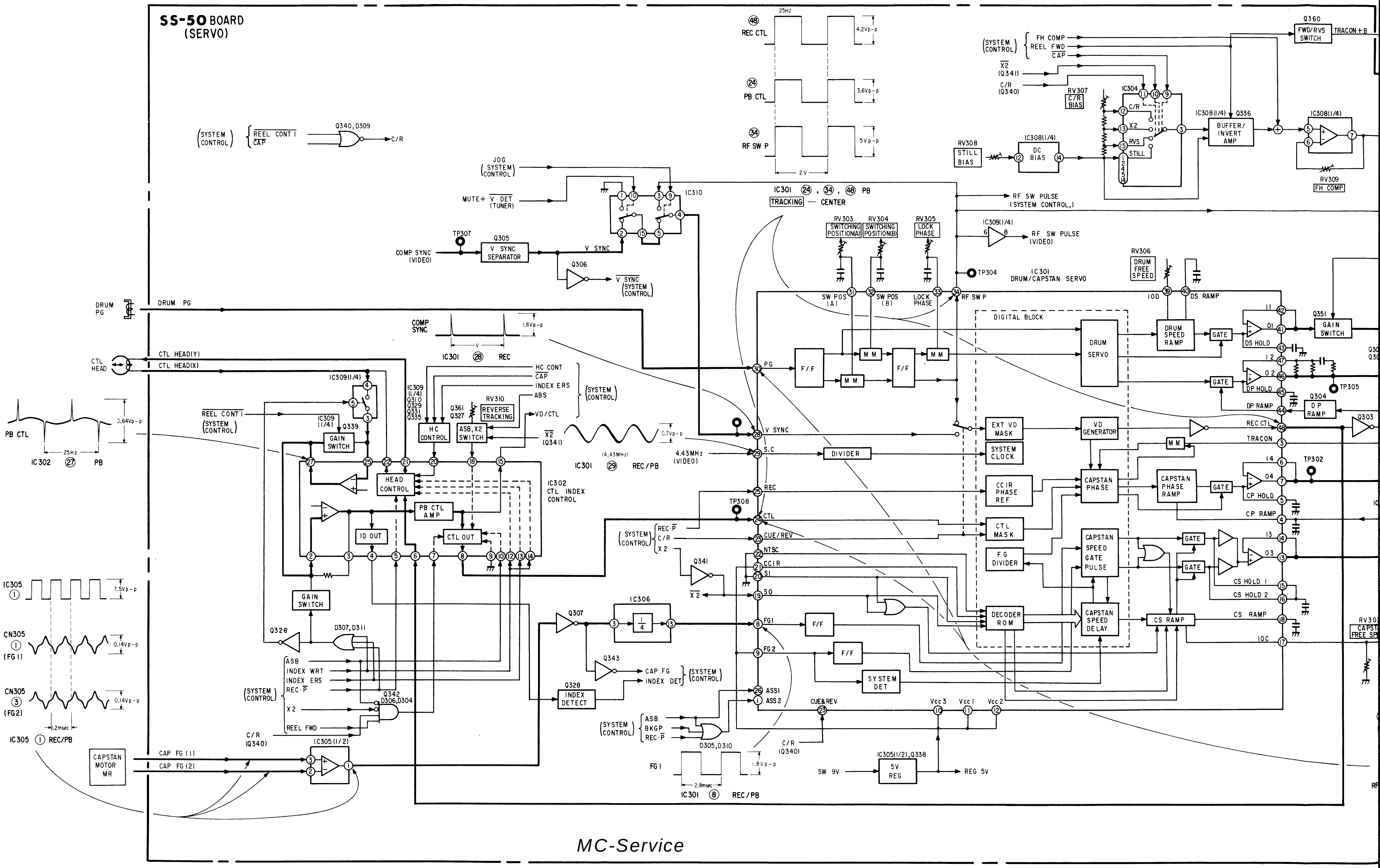
3-3. VIDEO BLOCK DIAGRAM


SECAM
PAL
IC006 ㊲ PB
IC006 ㊲, ㊴ PB
IC006 ㊴ REC
IC006 ①, ㊴ REC
IC006 ①, ⑤, ㉟ REC
IC006 ⑤, ㉟ REC
IC004 ⑧ REC
IC004 ⑧ PB
Q502
RV501 C COMB
LV501 C COMB
2H DELAY DL501
Q503 Q504
4.43MHz BPF BPF 001
C COMB DEFEAT
Q501
Q28
PAL PBC
Q27
COUNTER BELL FILTER
LV2 C BELL FILTER
RV9 P BURST LEVEL
IC6
CHROMA REVERSE (B-ID)
F.F
ID DET
P.C
ACC DET
ACK DET
ACK
ACC
P/B ADD
CH HOLD
CH SW
Q34 Q35 SW
L7, T2 LPF&TRAP
T1 BPF
Q71
CONV 2
CONV 1
INV
CF2 5.12MHz
PLL X3
CF3 13.3MHz
1/8
APC DET
COUNTER
APC ID
AFC DET
HD Ge
VXO
VCO
CV1 APC
X1 4.43MHz
Q30
Q103
RV8 C REC CURR
RV6 AFC OFFSET
RV7 AFC
Q31
V PG
REC C
PB C
PBC
RF SW P
HD
BF
COMP SYNC
IC006 ⑲ REC/PB
IC006 ⑭ REC/PB
IC006 ㉘ PB
IC006 ㉝ REC/PB
IC006 ㉒, ㉓ REC/PB
IC006 ㉚ REC/PB
Q23 PHASE SHIFT
RV4 PHASE SHIFT
Q26
Q25
IC4
SECAM PB
SECAM REC
IC5
SECAM REC
D13
RV5 CAR-BAL
LPF
Q20
DL1 1H+1/4 DELAY
RV2 EX CHROMA LEVEL
IC3
QUASI BURST
SW
SW CONT
JUMP DET
PHASE INVERT
Q24 PHASE SHIFT
CF
1H VCO
DET
RV3 JOG PLL
Q19
IC1
1/2
Q910
D6(1/2)
Q620
AMP
IC2
SECAM MODE DISCRIMINATOR
Q806
CF1 4.16MHz
RV1 SECAM ACK
LV1 SECAM ACKF
Q21
Q29 BELL FILTER
LV3 BELL FILTER
Q22 DELAY
IC20 HALF H KILLER
IC009 ㉜ PB
B/W
COLOR
Q100-102
ACK
MC CTL
MC1
DOC CTL
A' CONT
1H DELAY CONT
DOC PULSE
SYNC SEP
GATE PULSE
AGC DET
RV21 AGC
IC9 (1/2)
MUTE
CHROMA TRAP
AGC
CLAMP
LIM
HPF
Q718, 902 AMP
LPF
REC C
PB Y
REC Y
Q35-38 WHITE/DARK CLIP CARRIER SET, DEVIATION
Q39, 40, 823, 824 NON-LINER PRE-EMPHASIS
Q041
HALF H SHIFT
RV702 CARRIER SHIFT
RV42 CARRIER SET
RV13 WHITE CLIP
RV15 DEVIATION
RV16 COMPRESS
Q825 DENSITY SWITCH
Q826 WHITE CLIP SHIFT
KGK1
KGK2
NORMAL
EDIT
Q707, 813, 926 NOISE CANCEL CONTROL
Q714, 813 DENSITY SWITCH
Q702-704, 816 SHARPNESS CONTROL
IC009 ㊳ PB
688k TRAP
FM MOD
FM DET
IC9 (1/2)
Q70
Q56
Q817, 818 PHASE COMP
Q819, 820 AMP
Q48-51, 821, 822 NON-LINER DE-EMPHASIS HALF H SHIFT CANCEL
Q701
RV20 EXPANDER
RV19 PB LEVEL
D915 Y COMB DEFEAT
AFT
Y COMB CONTROL
Q811, 812
Q832, 833 PHASE COMP
Q715-717
IC401
CL
Q709 DOC CANCEL
AM MOD
1H DL DL401
RV401 Y COMB
LPF Q401
Q834
Q720, 721 DOC SENS SWITCH
RV10 DOC LEVEL
DOC DET
13.3MHz
IC401 ㉖ PB
PB 9V
6.5V
RV704 CH BALANCE
RV702 PB CH A
RV701 PB CH B
IC701
PB AMP
REC AMP
VIDEO HEAD B CH
VIDEO HEAD A CH
VIDEO HEAD A' CH
VIDEO HEAD B' CH
T701
REC PAUSE
IC701 ⑭ PB
IC701 ④, ㉕ REC
IC703 PB AMP
Q706, 761 AMP
IC704
IC705, Q704 SOFT LIMITER
TRAP
Q707 TRAP SWITCH
Q810
Q905, 906 VOLTAGE SHIFT
SW 9V
5V
KGK1
IC006 ①, ⑦ PB
IC006 ①, ⑦, ㉟ PB
Q705 REC CURRENT BUFFER
Q703 REC VOLTAGE BUFFER
CUR DET
VOLT DET
TP505
Q309
Q312 LEVEL SWITCH
D312, 313 LIMITER
Q303, 304 AMP
Q301, 302 VOLTAGE CONTROLLED AMP
Q305, 311 CHROMA GATE
Q306-308 PEAK DET
RV301 CHROMA COMPRESS
Q301, 508, 509 REC CURRENT CONTROL
Q706 Y/C MIX
REC Y+C
Q511-513
NOR
PRO
Q510 REC EQ
RV302 Y REC LEVEL
TP501
TP502
TP503
TP504
Q502, 504 AMP
Q506 REC CURRENT DET
IC501(1/2) MIX AMP
Q503, 505 AMP
Q503 REC VOLTAGE DET
IC501(1/2) INVERT AMP
RV501 REC
RP-31 BOARD
DH-4 BOARD(VIDEO)

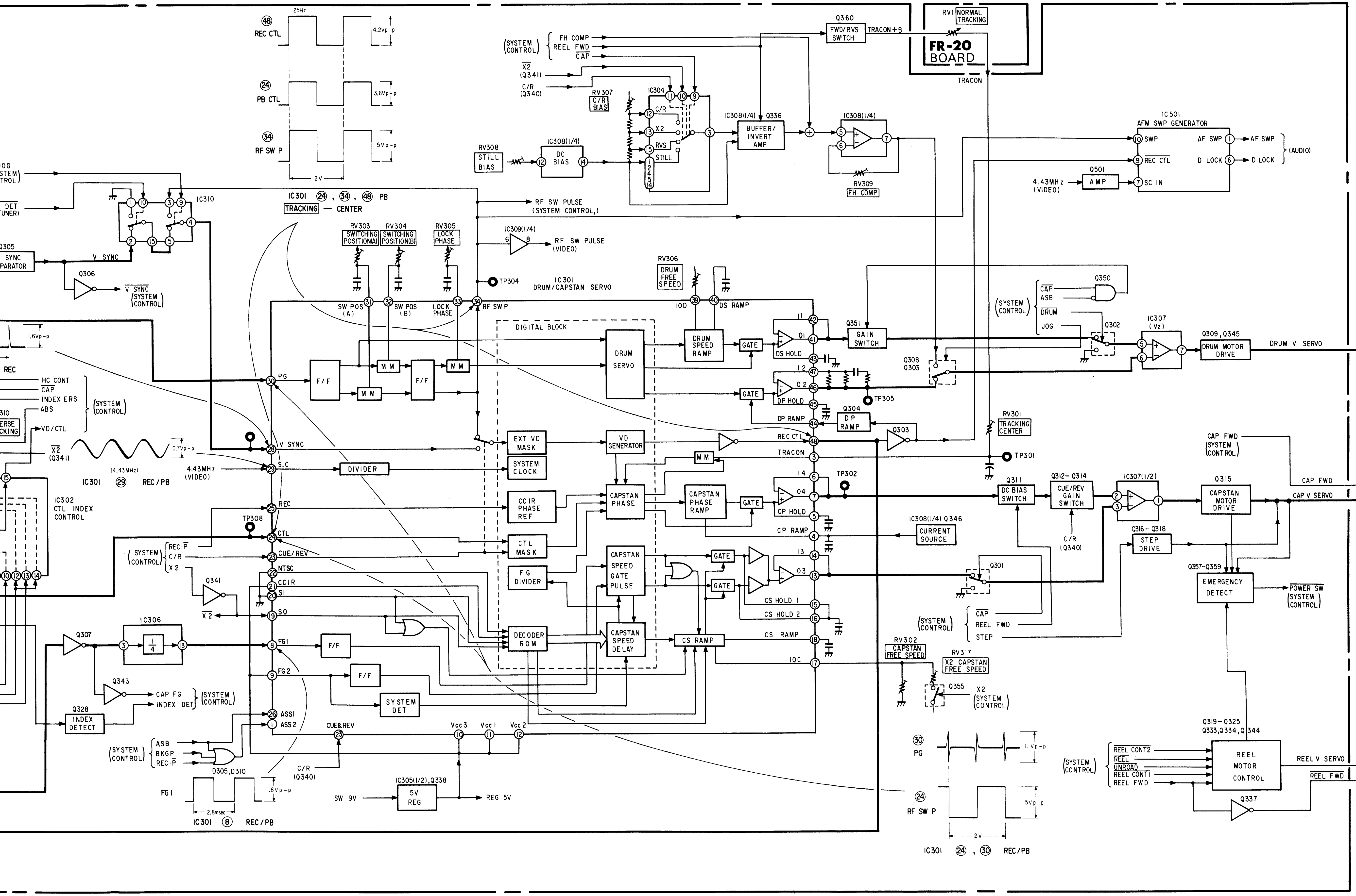


SECAM
PAL
IC006 ㊴ REC
IC006 ①, ㊴ REC
IC006 ①, ⑤, ㉟ REC
IC006 ⑤, ㉟ REC
IC004 ⑧ REC
IC004 ⑧ PB
TA-36 BOARD(VIDEO)
YC-40 BOARD
DH-4 BOARD(VIDEO)
FR-20 BOARD
COUNTER BELL FILTER
CHROMA REVERSE (B-ID)
ID DET
ACC DET
ACK DET
CH HOLD
PLL X3
APC DET
SECAM MODE DISCRIMINATOR
1H+3/4 DELAY
EX CHROMA LEVEL
QUASI BURST
JUMP DET
PHASE INVERT
PHASE SHIFT
FM VCO
BELL FILTER
HALF H KILLER
SYNC SEP
GATE PULSE
AGC DET
MUTE
CHROMA TRAP
CLAMP
WHITE/DARK CLIP CARRIER SET, DEVIATION
NON-LINER PRE-EMPHASIS
DENSITY SWITCH
WHITE CLIP SHIFT
NOISE CANCEL CONTROL
SHARPNESS CONTROL
PHASE COMP
NON-LINER DE-EMPHASIS HALF H SHIFT CANCEL
Y COMB CONTROL
Y COMB DEFEAT
DOC CANCEL
DOC SENS SWITCH
AM MOD
IH DL
LPF Q401
PB 9V SWITCH
6.5V REG
LEVEL SWITCH
LIMITER
AMP
VOLTAGE CONTROLLED AMP
CHROMA GATE
PEAK DET
REC CURRENT CONTROL
Y/C MIX
REC EQ
MIX AMP
INVERT AMP
MCI LOGIC
DOC CONTROL
A' CONT LOGIC
DELAY
SHAPER
CHARACTOR INSERT
TEST SIGNAL GENERATOR
SYSTEM CONTROL
RF MODULATOR (TUNER)
EURO CONNECTOR
VIDEO OUT
VIDEO IN
SHARPNESS
SUPER BETA
EDIT
INPUT SELECT
IC009 ㉜ PB
IC009 ③, ㉟ REC
IC009 ㉟ PB
IC009 ㊳ PB
IC401 ㉖ PB
IC006 ⑲ REC/PB
IC006 ⑭ REC/PB
IC006 ㉘ PB
IC006 ㉒, ㉓ REC/PB
IC006 ㉞ REC/PB

3-4. SERVO BLOCK DIAGRAM

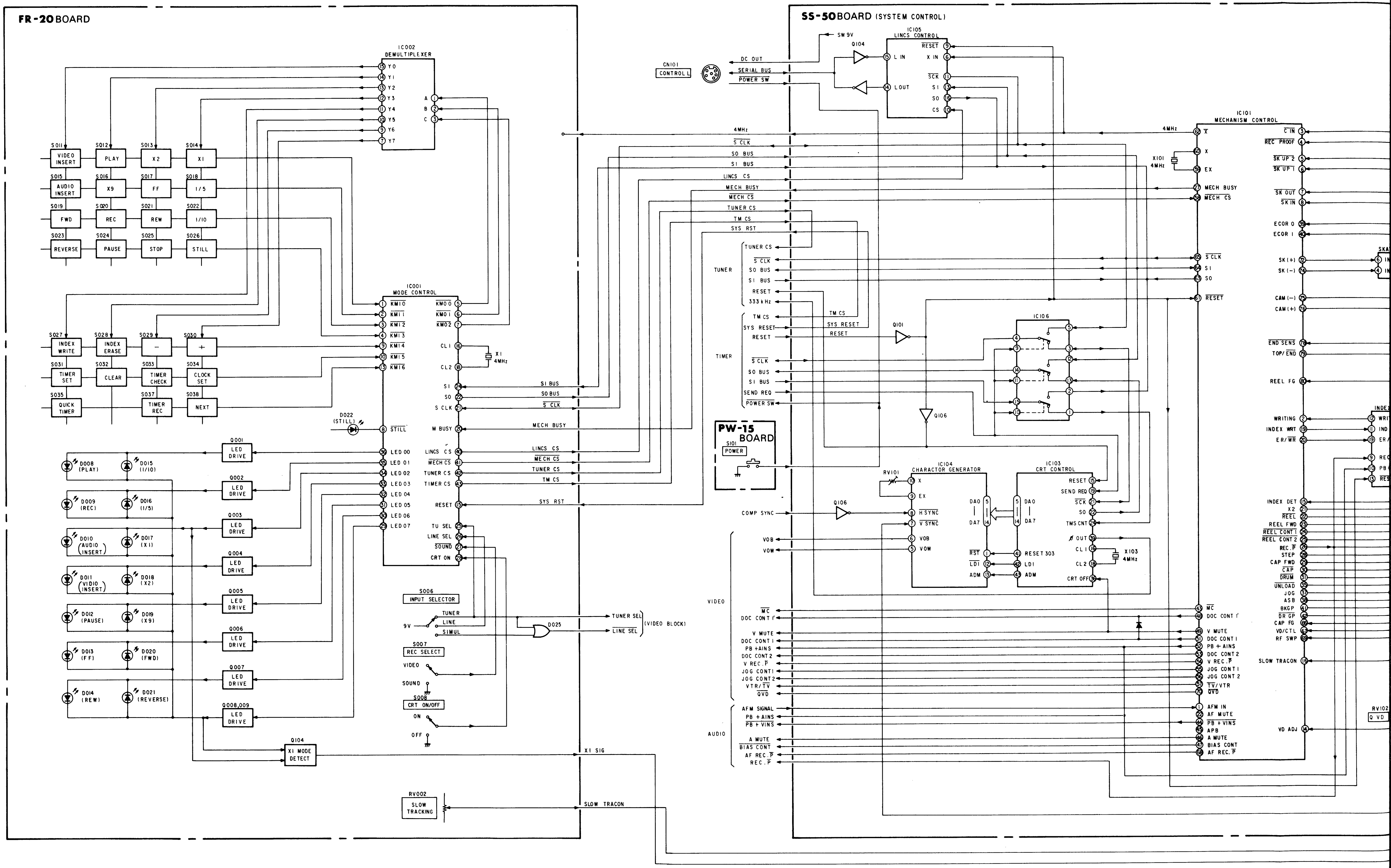

SS-50 BOARD
(SERVO)
REC CTL
PB CTL
RF SW P
25Hz
4.2Vp-p
3.6Vp-p
5Vp-p
2V
IC301 ㉔ , ㉞ , ㊽ PB
TRACKING — CENTER
(SYSTEM CONTROL)
REEL CONT I
CAP
Q340, D309
C/R
JOG (SYSTEM CONTROL)
MUTE+ V DET (TUNER)
IC310
TP307
COMP SYNC (VIDEO)
Q305
V SYNC SEPARATOR
V SYNC
Q306
V SYNC (SYSTEM CONTROL)
DRUM PG
CTL HEAD
CTL HEAD(Y)
CTL HEAD(X)
COMP SYNC
1.6Vp-p
IC301 ㉘ REC
IC309(1/4)
IC309 (1/4) Q310 Q329 Q331 Q335
HC CONT
CAP
INDEX ERS
ABS
(SYSTEM CONTROL)
RV310
REVERSE TRACKING
Q361 Q327
VD/CTL
HC CONTROL
ASB, X2 SWITCH
X2 (Q341)
0.7Vp-p
(4.43MHz)
IC301 ㉙ REC/PB
4.43MHz (VIDEO)
PB CTL
3.64Vp-p
25Hz
IC302 ㉗ PB
REEL CONT I
(SYSTEM CONTROL)
IC309 (1/4)
Q339
GAIN SWITCH
HEAD CONTROL
PB CTL AMP
ID OUT
CTL OUT
IC302 CTL INDEX CONTROL
GAIN SWITCH
Q326
D307, D311
ASB
INDEX WRT
INDEX ERS
REC·P
X2
REEL FWD
Q342 D306, D304
C/R (Q340)
IC305(1/2)
IC305 ① 7.5Vp-p
CN305 ① (FG1) 0.14Vp-p
CN305 ③ (FG2) 0.14Vp-p
1.2msec
IC305 ① REC/PB
CAPSTAN MOTOR MR
CAP FG (1)
CAP FG (2)
Q307
IC306
1/4
Q343
CAP FG
INDEX DET
(SYSTEM CONTROL)
Q328 INDEX DETECT
(SYSTEM CONTROL) REC·P C/R X2
Q341
X2
(SYSTEM CONTROL) ASB BKGP REC·P
D305, D310
FG1
1.8Vp-p
2.8msec
IC301 ⑧ REC/PB
TP308
RV303 SWITCHING POSITION(A)
RV304 SWITCHING POSITION(B)
RV305 LOCK PHASE
SW POS (A)
SW POS (B)
LOCK PHASE
RF SW P
IC309(1/4)
RF SW PULSE (SYSTEM CONTROL)
RF SW PULSE (VIDEO)
TP304
IC301 DRUM/CAPSTAN SERVO
DIGITAL BLOCK
PG
F/F
MM
DRUM SERVO
V SYNC
S.C
DIVIDER
REC
CTL
CUE/REV
NTSC
CCIR
SI
SO
FG1
FG2
ASSI
ASS2
EXT VD MASK
SYSTEM CLOCK
CCIR PHASE REF
CTL MASK
FG DIVIDER
VD GENERATOR
CAPSTAN PHASE
CAPSTAN SPEED GATE PULSE
DECODER ROM
CAPSTAN SPEED DELAY
SYSTEM DET
CUE&REV
Vcc 3
Vcc 1
Vcc 2
C/R (Q340)
SW 9V
IC305(1/2), Q338
5V REG
REG 5V
(SYSTEM CONTROL)
FH COMP
REEL FWD
CAP
X2 (Q341)
C/R (Q340)
RV307 C/R BIAS
IC304
C/R
X2
RVS
STILL
RV308 STILL BIAS
IC308(1/4)
DC BIAS
IC308(1/4)
Q336
BUFFER/ INVERT AMP
IC308(1/4)
RV309 FH COMP
Q360
FWD/RVS SWITCH
TRACON+B
RV306 DRUM FREE SPEED
IOD
DS RAMP
DRUM SPEED RAMP
GATE
DS HOLD
DP HOLD
DP RAMP
Q304 DP RAMP
TP305
Q351 GAIN SWITCH
REC CTL
TRACON
MM
Q303
TP302
CAPSTAN PHASE RAMP
CP HOLD
CP RAMP
GATE
CS HOLD 1
CS HOLD 2
CS RAMP
IOC
CS RAMP
CAPSTAN FREE SPEED

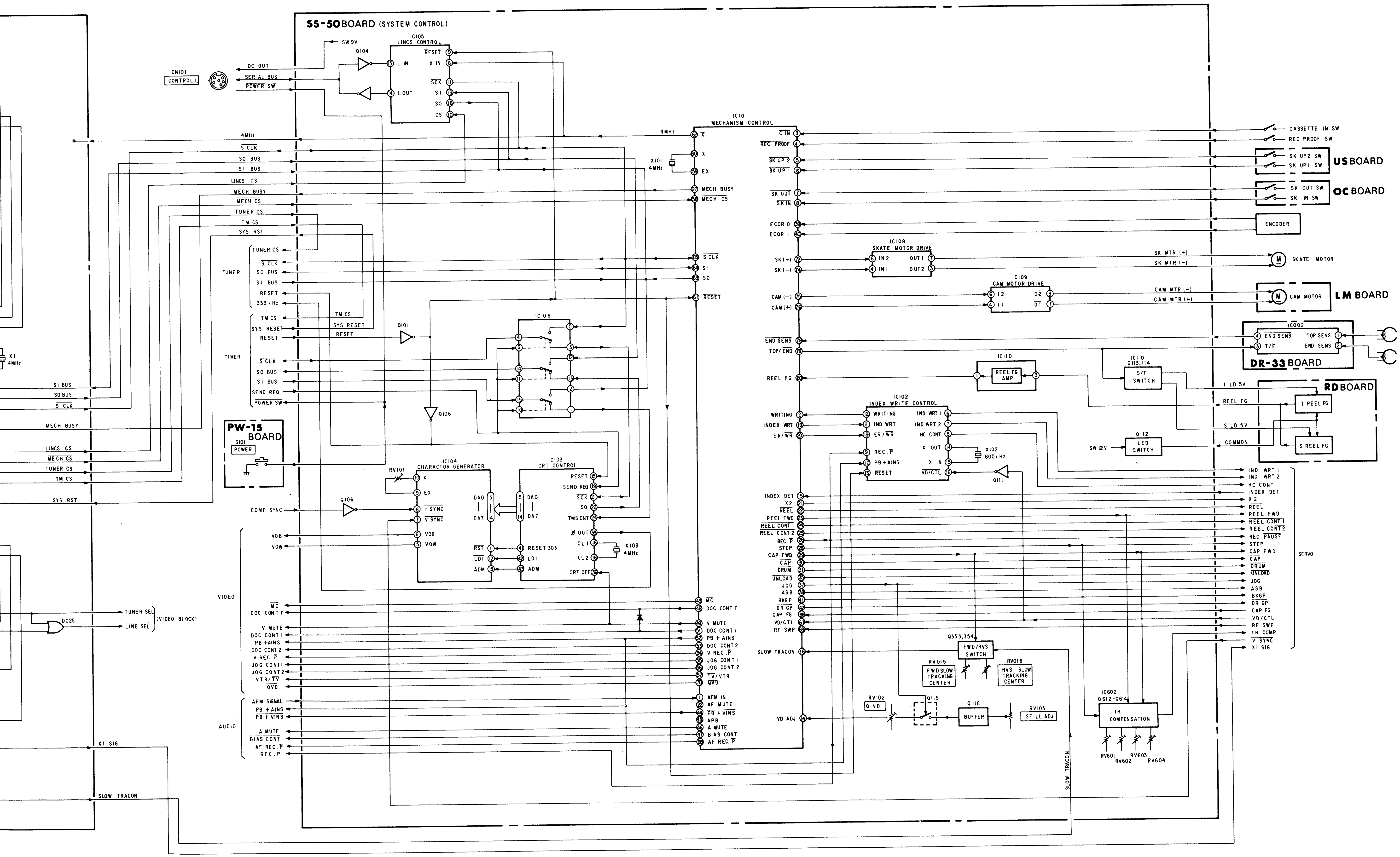
MC-Service



25Hz
(48) REC CTL
4.2Vp-p
(24) PB CTL
3.6Vp-p
(34) RF SW P
5Vp-p
2V
IC301 (24), (34), (48) PB
TRACKING — CENTER
(SYSTEM CONTROL)
FH COMP
REEL FWD
CAP
X2 (Q341)
C/R (Q340)
RV307 C/R BIAS
IC304
C/R
X2
RVS
STILL
RV308 STILL BIAS
IC308(1/4) DC BIAS
IC308(1/4) Q336
BUFFER/ INVERT AMP
Q360
FWD/RVS SWITCH
TRACON+B
RV1 NORMAL TRACKING
FR-20 BOARD
TRACON
IC308(1/4)
RV309 FH COMP
IC501 AFM SWP GENERATOR
SWP
REC CTL
SC IN
AF SWP
D LOCK
(AUDIO)
Q501 AMP
4.43MHz (VIDEO)
IC310
DET (TUNER)
Q305 SYNC SEPARATOR
V SYNC
Q306
V SYNC (SYSTEM CONTROL)
RF SW PULSE (SYSTEM CONTROL)
IC309(1/4)
RF SW PULSE (VIDEO)
TP304
IC301 DRUM/CAPSTAN SERVO
RV303 SWITCHING POSITION(A)
RV304 SWITCHING POSITION(B)
RV305 LOCK PHASE
SW POS (A)
SW POS (B)
LOCK PHASE
RF SW P
RV306 DRUM FREE SPEED
IOD
DS RAMP
DIGITAL BLOCK
F/F
MM
DRUM SERVO
DRUM SPEED RAMP
GATE
DS HOLD
DP HOLD
DP RAMP
Q304 DP RAMP
TP305
Q351 GAIN SWITCH
Q308 Q303
(SYSTEM CONTROL)
CAP
ASB
DRUM
JOG
Q350
Q302
IC307 (V2)
Q309, Q345 DRUM MOTOR DRIVE
DRUM V SERVO
DRUM MOTOR
1.6Vp-p
REC
HC CONT
CAP
INDEX ERS
ABS
V/D/CTL
(SYSTEM CONTROL)
X2 (Q341)
0.7Vp-p
4.43MHz (VIDEO)
(4.43MHz)
IC301 (29) REC/PB
IC302 CTL INDEX CONTROL
PG
V SYNC
S.C
DIVIDER
EXT VD MASK
SYSTEM CLOCK
VD GENERATOR
REC CTL
TRACON
M.M.
Q303
RV301 TRACKING CENTER
TP301
REC
TP308
CTL
CCIR PHASE REF
CAPSTAN PHASE
CAPSTAN PHASE RAMP
TP302
CP HOLD
CP RAMP
IC308(1/4) Q346 CURRENT SOURCE
CTL MASK
CUE/REV
(SYSTEM CONTROL)
REC·P
C/R
X2
NTSC
CCIR
SI
SO
Q341
X2
F G DIVIDER
CAPSTAN SPEED GATE PULSE
DECODER ROM
CAPSTAN SPEED DELAY
CS RAMP
CS HOLD 1
CS HOLD 2
IOC
Q301
(SYSTEM CONTROL)
CAP
REEL FWD
STEP
Q311 DC BIAS SWITCH
Q312–Q314 CUE/REV GAIN SWITCH
C/R (Q340)
IC307(1/2)
Q315 CAPSTAN MOTOR DRIVE
CAP FWD (SYSTEM CONTROL)
CAP FWD
CAP V SERVO
CAPSTAN MOTOR
Q316–Q318 STEP DRIVE
Q357–Q359 EMERGENCY DETECT
POWER SW (SYSTEM CONTROL)
IC306
1/4
Q307
FG1
FG2
SYSTEM DET
Q343
CAP FG
INDEX DET
(SYSTEM CONTROL)
Q328 INDEX DETECT
ASS1
ASS2
(SYSTEM CONTROL)
ASB
BKGP
REC·P
D305, D310
CUE&REV
Vcc3
Vcc1
Vcc2
C/R (Q340)
FG1
1.8Vp-p
2.8msec
IC301 (8) REC/PB
SW 9V
IC305(1/2), Q338 5V REG
REG 5V
RV302 CAPSTAN FREE SPEED
RV317 X2 CAPSTAN FREE SPEED
Q355
X2 (SYSTEM CONTROL)
(30) PG
1.1Vp-p
(24) RF SW P
5Vp-p
2V
IC301 (24), (30) REC/PB
Q319–Q325 Q333, Q334, Q344
REEL MOTOR CONTROL
(SYSTEM CONTROL)
REEL CONT2
REEL
UNROAD
REEL CONT1
REEL FWD
REEL V SERVO
REEL FWD
REEL MOTOR
Q337

3-5. SYSTEM CONTROL BLOCK DIAGRAM


FR-20 BOARD
IC002 DEMULTIPLEXER
Y0
Y1
Y2
Y3
Y4
Y5
Y6
Y7
A
B
C
S011 VIDEO INSERT
S012 PLAY
S013 X2
S014 X1
S015 AUDIO INSERT
S016 X9
S017 FF
S018 1/5
S019 FWD
S020 REC
S021 REW
S022 1/10
S023 REVERSE
S024 PAUSE
S025 STOP
S026 STILL
S027 INDEX WRITE
S028 INDEX ERASE
S029 −
S030 +
S031 TIMER SET
S032 CLEAR
S033 TIMER CHECK
S034 CLOCK SET
S035 QUICK TIMER
S037 TIMER REC
S038 NEXT
IC001 MODE CONTROL
KMI0
KMI1
KMI2
KMI3
KMI4
KMI5
KMI6
KMO0
KMO1
KMO2
CL1
CL2
X1 4MHz
SI
SO
S CLK
M BUSY
STILL
D022 (STILL)
LED 00
LED 01
LED 02
LED 03
LED 04
LED 05
LED 06
LED 07
LINCS CS
MECH CS
TUNER CS
TIMER CS
RESET
TU SEL
LINE SEL
SOUND
CRT ON
Q001 LED DRIVE
Q002 LED DRIVE
Q003 LED DRIVE
Q004 LED DRIVE
Q005 LED DRIVE
Q006 LED DRIVE
Q007 LED DRIVE
Q008,009 LED DRIVE
D008 (PLAY)
D015 (1/10)
D009 (REC)
D016 (1/5)
D010 (AUDIO INSERT)
D017 (X1)
D011 (VIDIO INSERT)
D018 (X2)
D012 (PAUSE)
D019 (X9)
D013 (FF)
D020 (FWD)
D014 (REW)
D021 (REVERSE)
Q104 X1 MODE DETECT
S006 INPUT SELECTOR
TUNER
LINE
SIMUL
9V
D025
TUNER SEL
LINE SEL
(VIDEO BLOCK)
S007 REC SELECT
VIDEO
SOUND
S008 CRT ON/OFF
ON
OFF
RV002 SLOW TRACKING
SI BUS
SO BUS
S CLK
MECH BUSY
LINCS CS
MECH CS
TUNER CS
TM CS
SYS RST
X1 SIG
SLOW TRACON
CN101 CONTROL L
DC OUT
SERIAL BUS
POWER SW
4MHz
S CLK
SO BUS
SI BUS
LINCS CS
MECH BUSY
MECH CS
TUNER CS
TM CS
SYS RST
SS-50 BOARD (SYSTEM CONTROL)
SW 9V
Q104
IC105 LINCS CONTROL
L IN
L OUT
RESET
X IN
SCK
SI
SO
CS
TUNER
TUNER CS
S CLK
SO BUS
SI BUS
RESET
333kHz
TIMER
TM CS
SYS RESET
RESET
S CLK
SO BUS
SI BUS
SEND REQ
POWER SW
TM CS
SYS RESET
RESET
Q101
Q106
IC106
PW-15 BOARD
S101 POWER
RV101
IC104 CHARACTER GENERATOR
X
EX
H SYNC
V SYNC
VOB
VOW
DA0
DA7
RST
LD1
ADM
Q106
COMP SYNC
IC103 CRT CONTROL
RESET
SEND REQ
SCK
SO
TMS CNT
φ OUT
CL1
CL2
CRT OFF
RESET 303
LD1
ADM
X103 4MHz
VIDEO
VOB
VOW
MC
DOC CONT Γ
V MUTE
DOC CONT 1
PB+AINS
DOC CONT 2
V REC.P
JOG CONT1
JOG CONT2
VTR/TV
QVD
AUDIO
AFM SIGNAL
PB +AINS
PB+VINS
A MUTE
BIAS CONT
AF REC.P
REC.P
IC101 MECHANISM CONTROL
4MHz
X101 4MHz
X
X
EX
MECH BUSY
MECH CS
S CLK
SI
SO
RESET
MC
DOC CONT Γ
V MUTE
DOC CONT 1
PB+AINS
DOC CONT 2
V REC.P
JOG CONT 1
JOG CONT 2
TV/VTR
QVD
AFM IN
AF MUTE
PB+VINS
APB
A MUTE
BIAS CONT
AF REC.P
C IN
REC PROOF
SK UP 2
SK UP 1
SK OUT
SK IN
ECOR 0
ECOR 1
SK(+)
SK(−)
CAM(−)
CAM(+)
END SENS
TOP/END
REEL FG
WRITING
INDEX WRT
ER/WR
INDEX DET
X2
REEL
REEL FWD
REEL CONT 1
REEL CONT 2
REC.P
STEP
CAP FWD
CAP
DRUM
UNLOAD
JOG
ASB
BKGP
DR GP
CAP FG
VD/CTL
RF SWP
SLOW TRACON
VD ADJ
RV102 Q VD


SS-50 BOARD (SYSTEM CONTROL)
IC105 LINCS CONTROL
SW 9V
Q104
RESET
L IN
X IN
SCK
SI
SO
CS
L OUT
CN101 CONTROL L
DC OUT
SERIAL BUS
POWER SW
4MHz
S CLK
SO BUS
SI BUS
LINCS CS
MECH BUSY
MECH CS
TUNER CS
TM CS
SYS RST
TUNER
TIMER
TUNER CS
333kHz
SYS RESET
SEND REQ
POWER SW
Q101
IC106
Q106
PW-15 BOARD
S101 POWER
RV101
IC104 CHARACTOR GENERATOR
H SYNC
V SYNC
VOB
VOW
RST
LDI
ADM
DA0
DA7
IC103 CRT CONTROL
RESET
SEND REQ
SCK
SO
TMS CNT
Ø OUT
CL1
CL2
CRT OFF
RESET 303
X103 4MHz
COMP SYNC
VIDEO
AUDIO
MC
DOC CONT 1'
V MUTE
DOC CONT 1
PB +AINS
DOC CONT 2
V REC. P
JOG CONT 1
JOG CONT 2
VTR/TV
QVD
AFM SIGNAL
PB +VINS
A MUTE
BIAS CONT
AF REC. P
REC. P
AFM IN
AF MUTE
APB
TUNER SEL
LINE SEL
(VIDEO BLOCK)
D025
X1 4MHz
X1 SIG
SLOW TRACON
IC101 MECHANISM CONTROL
X
EX
X101 4MHz
C IN
REC PROOF
SK UP 2
SK UP 1
SK OUT
SK IN
ECOR 0
ECOR 1
SK(+)
SK(−)
CAM(−)
CAM(+)
END SENS
TOP/END
REEL FG
WRITING
INDEX WRT
ER/WR
INDEX DET
X2
REEL
REEL FWD
REEL CONT 1
REEL CONT 2
STEP
CAP FWD
CAP
DRUM
UNLOAD
JOG
ASB
BKGP
DR GP
CAP FG
VD/CTL
RF SWP
VD ADJ
IC108 SKATE MOTOR DRIVE
IN2
IN1
OUT1
OUT2
IC109 CAM MOTOR DRIVE
IC110 REEL FG AMP
IC102 INDEX WRITE CONTROL
IND WRT
IND WRT 1
IND WRT 2
HC CONT
X OUT
X IN
X102 800kHz
Q111
Q353,354 FWD/RVS SWITCH
RV015 FWD SLOW TRACKING CENTER
RV016 RVS SLOW TRACKING CENTER
RV102 Q VD
Q115
Q116 BUFFER
RV103 STILL ADJ
IC602 Q612–Q614 fH COMPENSATION
RV601 RV602 RV603 RV604
CASSETTE IN SW
REC PROOF SW
SK UP2 SW
SK UP1 SW
US BOARD
SK OUT SW
SK IN SW
OC BOARD
ENCODER
SK MTR (+)
SK MTR (−)
SKATE MOTOR
CAM MTR (−)
CAM MTR (+)
CAM MOTOR
LM BOARD
IC002
TOP SENS
T/E
T SENSOR
S SENSOR
DR-33 BOARD
IC110 Q113,114 S/T SWITCH
Q112 LED SWITCH
SW 12V
T LD 5V
S LD 5V
COMMON
T REEL FG
S REEL FG
RD BOARD
IND WRT 1
IND WRT 2
HC CONT
INDEX DET
REC PAUSE
fH COMP
V SYNC
X1 SIG
SERVO

3-6. SYSTEM CONTROL INTERFACE

[SYSTEM CONTROL – VIDEO BLOCK INTERFACE]

MODE			STOP	FF	REW	PICTURE SERCH		FR SERCH		PB	PB·P	REC	REC·P	FRAME	−FRAME	MODE				JOG				A-IN
SIGNAL	I/O	PIN No.				CUE	REV	CUE	REV							×⅕,⅒	×1	×2	×9	×−⅕,−⅒	×1	×2	×9	
REC $\overline{\text{P}}$	O	IC101-㉖	L	L	L	L	L	L	L	L	L	H	L	L	L	L	L	L	L	L	L	L	L	L
$\overline{\text{MC}}$	O	IC101-㊸	H	H	H	L	L	L	L	H	L	H	H	L	L	L	L	L	L	L	L	L	L	H
$\overline{\text{PB+V INS}}$	O	IC101-㊹	H	H	H	L	L	L	L	L	L	H	H	L	L	L	L	L	L	L	L	L	L	H
V MUTE	O	IC101-㊾	L	L	L	L	L	L	L	L ※1	L	L	L	L	L	L	H	H	L	L	H	H	L	H
DOC CONT 1	O	IC101-(51)	H	H	H	L	L	L	L	H	H	H	H	H	H	H	H	H	L	Pulse	L	L	L	H
PB+A INS	O	IC101-(52)	L	L	L	H	H	H	H	H	H	L	L	H	H	H	H	H	H	H	H	H	H	H
DOC CONT 2	O	IC101-(53)	L	L	L	L	L	L	L	L	L	H	L	Pulse	Pulse	Pulse	H	Pulse	L	Pulse	L	L	L	H
V REC $\overline{\text{P}}$	O	IC101-(54)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
JOG CNT 1	O	IC101-(55)	H	H	H	L	L	L	L	H	Pulse	H	H	Pulse	Pulse	H	H	H	L	H	L	L	L	H
JOG CNT 2	O	IC101-(56)	H	L	L	H	H	H	H	H	L	H	H	L	L	L	H	L	H	L	L	L	H	H

[SYSTEM CONTROL – AUDIO BLOCK INTERFACE]

MODE			STOP	FF	REW	PICTURE SERCH		FR SERCH		PB	PB·P	REC	REC·P	FRAME	−FRAME	JOG								A-IN
SIGNAL	I/O	PIN No.				CUE	REV	CUE	REV							×⅕,⅒	×1	×2	×9	×−⅕,−⅒	×−1	×−2	×−9	
A MUTE	O	IC101-㊻	L	L	L	H	H	H	H	L ※1	H	L	L	H	H	H	H	H	H	H	H	H	H	L
$\overline{\text{BIAS CONT}}$	O	IC101-㊼	H	H	H	H	H	H	H	H	H	L	H	H	H	H	H	H	H	H	H	H	H	L
AF REC $\overline{\text{P}}$	O	IC101-(68)	L	L	L	L	L	L	L	L	L	H	L	L	L	L	L	L	L	L	L	L	L	H

[SYSTEM CONTROL – REEL MOTOR BLOCK INTERFACE]

MODE			STOP	FF	REW	PICTURE SERCH		FR SERCH		PB	PB·P	REC	REC·P	FRAME	−FRAME	JOG								A-IN
SIGNAL	I/O	PIN No.				CUE	REV	CUE	REV							×⅕,⅒	×1	×2	×9	×−⅕,−⅒	×−1	×−2	×−9	
$\overline{\text{REEL}}$	O	IC101-㉒	H	L	L	L	L	L	L	L	L	L	H	L	L	L	L	L	L	L	L	L	L	L
REEL FWD	O	IC101-㉓	H	H	L	H	L	H	L	H	H	H	L	H	L	H	H	H	H	L	L	L	L	H
$\overline{\text{REEL CONT 1}}$	O	IC101-㉔	H	L	L	L	L	L	L	H	H	H	H	H	H	H	H	H	L	H	H	H	L	H
$\overline{\text{REEL CONT 2}}$	O	IC101-㉕	H	L	L	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	L	L	H	H
$\overline{\text{UN LOAD}}$	O	IC101-㉟	H ※2	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H

SERCH	PB	PB·P	REC	REC·P	FRAME	−FRAME			MODE		JOG				A-IN	A-IN·P	V-IN	V-IN·P	AV-IN	AV-IN·P
REV							×⅕,⅒	×1	×2	×9	×−⅕,−⅒	×1	×2	×9						
L	L	L	H	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
L	H	L	H	H	L	L	L	L	L	L	L	L	L	L	H	L	H	H	H	H
L	L	L	H	H	L	L	L	L	L	L	L	L	L	L	H	L	H	H	H	H
L	L ※1	L	L	L	L	L	L	H	H	L	L	H	H	L	H	L	L	L	L	L
L	H	H	H	H	H	H	H	H	H	L	Pulse	L	L	L	H	H	H	H	H	H
H	H	H	L	L	H	H	H	H	H	H	H	H	H	H	H	H	L	L	L	L
L	L	L	H	L	Pulse	Pulse	Pulse	H	Pulse	L	Pulse	L	L	L	H	Pulse	H	L	H	H
L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
L	H	Pulse	H	H	Pulse	Pulse	H	H	H	L	H	L	L	L	H	H	H	H	H	H
H	H	L	H	H	L	L	L	H	L	H	L	L	L	H	H	L	H	H	H	H

SERCH	PB	PB·P	REC	REC·P	FRAME	−FRAME				JOG					A-IN	A-IN·P	V-IN	V-IN·P	AV-IN	AV-IN·P
REV							×⅕,⅒	×1	×2	×9	×−⅕,−⅒	×−1	×−2	×−9						
H	L ※1	H	L	L	H	H	H	H	H	H	H	H	H	H	L	L	L	H	L	L
H	H	H	L	H	H	H	H	H	H	H	H	H	H	H	L	L	L	L	L	L
L	L	L	H	L	L	L	L	L	L	L	L	L	L	L	H	L	H	L	H	L

SERCH	PB	PB·P	REC	REC·P	FRAME	−FRAME				JOG					A-IN	A-IN·P	V-IN	V-IN·P	AV-IN	AV-IN·P
REV							×⅕,⅒	×1	×2	×9	×−⅕,−⅒	×−1	×−2	×−9						
L	L	L	L	H	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
L	H	H	H	L	H	L	H	H	H	H	L	L	L	L	H	H	H	H	H	H
L	H	H	H	H	H	H	H	H	H	L	H	H	H	L	H	H	H	H	H	H
H	H	H	H	H	H	H	H	H	H	H	H	L	L	H	H	H	H	H	H	H
H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H

※1 "H" when there is no CTL.

※2 "L" for EJECT.

[SYSTEM CONTROL – MECHANISM BLOCK INTERFACE]

MODE			STOP	FF	REW	PICTURE SERCH		FR SERCH		PB	PB·P	REC	REC·P	FRAME	-FRAME	JOG								A-IN
SIGNAL	I/O	PIN No.				CUE	REV	CUE	REV							×⅕,⅒	×1	×2	×9	×−⅕,−⅒	×−1	×−2	×−9	
$\overline{\text{C IN}}$	I	IC101-③	L ※1	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
$\overline{\text{REC PRF}}$	I	IC101-④	※2	※2	※2	※2	※2	※2	※2	※2	※	L	L	※3	※3	※3	※3	※3	※3	※3	※3	※3	※3	※3
$\overline{\text{SK UP 2}}$	I	IC101-⑤	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
$\overline{\text{SK UP 1}}$	I	IC101-⑥	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
$\overline{\text{SK OUT}}$	I	IC101-⑦	※3	※3	※3	※3	※3	※3	※3	※3	※3	※3	※3	※3	※3	※3	※3	※3	※3	※3	※3	※3	※3	※3
$\overline{\text{SK IN}}$	I	IC101-⑧	※4	※4	※4	※4	※4	※4	※4	※4	※4	※4	※4	※4	※4	※4	※4	※4	※4	※4	※4	※4	※4	※4
TV/$\overline{\text{VTR}}$	O	IC101-(57)	※5	※5	※5	※5	※5	※5	※5	※5	※5	※5	※5	※5	※5	※5	※5	※5	※5	※5	※5	※5	※5	※5
SK (+)	O	IC101-(72)	※6	※6	※6	※6	※6	※6	※6	※6	※6	※6	※6	※6	※6	※6	※6	※6	※6	※6	※6	※6	※6	※6
SK (−)	O	IC101-(74)	※7	※7	※7	※7	※7	※7	※7	※7	※7	※7	※7	※7	※7	※7	※7	※7	※7	※7	※7	※7	※7	※7
CAM (−)	O	IC101-(75)	H ※8	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
CAM (+)	O	IC101-(76)	H ※9	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
$\overline{\text{END SENS}}$	O	IC101-(78)	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
TOP/$\overline{\text{END}}$	O	IC101-(79)	L	L	H	L	H	L	H	L	L	L	L	L	H	L	L	L	L	H	H	H	H	L

[SYSTEM CONTROL – SERVO BLOCK INTERFACE]

MODE			STOP	FF	REW	PICTURE SERCH		FR SERCH		PB	PB·P	REC	REC·P	FRAME	−FRAME	JOG								A-IN
SIGNAL	I/O	PIN No.				CUE	REV	CUE	REV							×⅕,⅒	×1	×2	×9	×−⅕,−⅒	×−1	×−2	×−9	
X2	O	IC101-㉑	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	H	L	L	L	L	L	L
CAP FWD	O	IC101-㉙	H	H	L	H	L	H	L	H	H	H	H	H	H	Pulse	H	H	H	Pulse	L	L	L	L
$\overline{\text{CAP}}$	O	IC101-㉚	H	H	H	L	L	L	L	L	H	L	H	H	H	H	L	L	L	H	L	L	L	L
$\overline{\text{DRUM}}$	O	IC101-㉛	H	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
JOG	O	IC101-㊲	L	L	L	H	H	H	H	L	H	L	L	H	H	H	L	H	H	H	H	H	H	L
ASB	O	IC101-㊳	L	L	L	L	L	L	L	L	L	Pulse	H	L	L	L	L	L	L	L	L	L	L	L

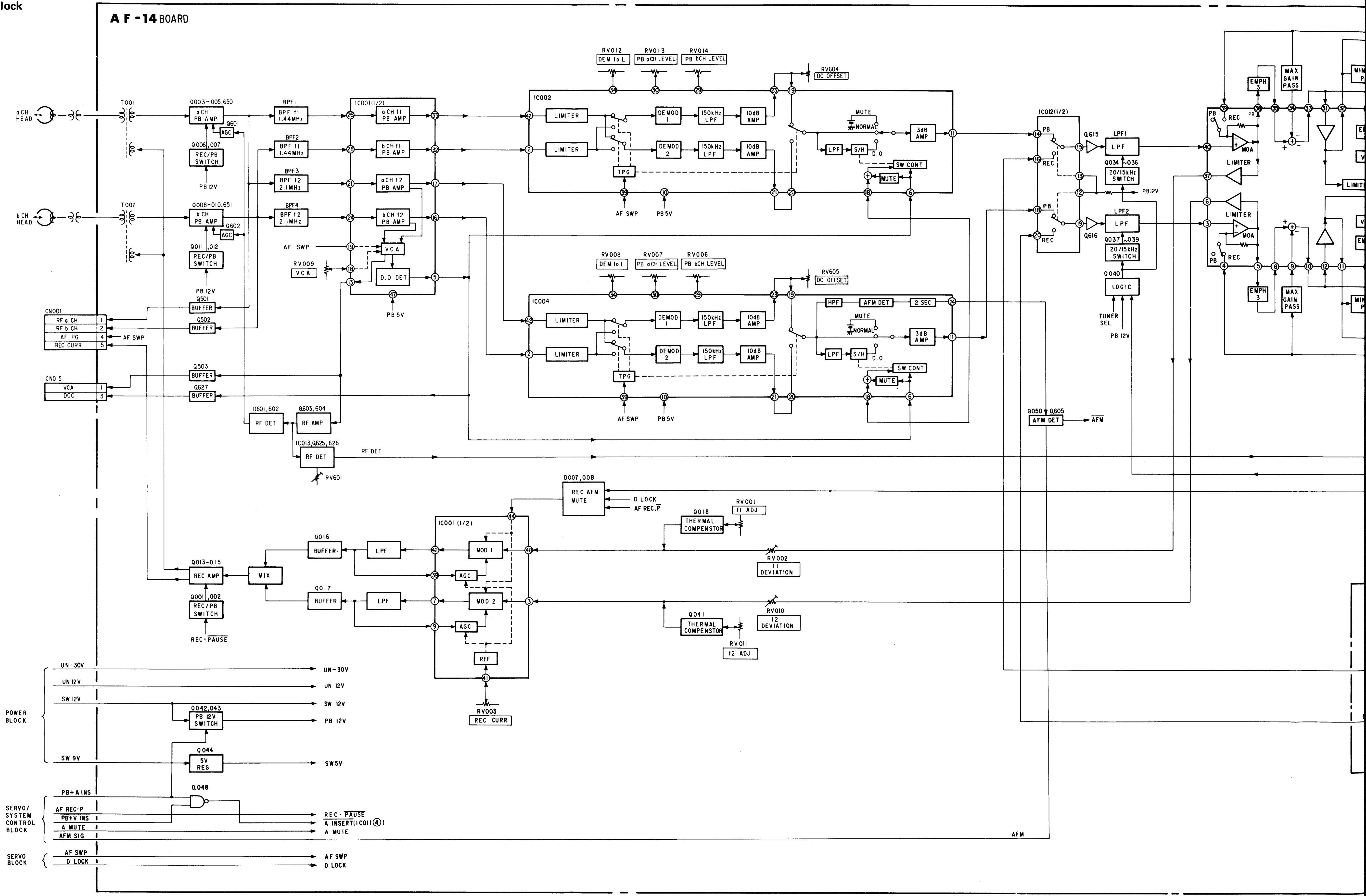
R SERCH		PB	PB·P	REC	REC·P	FRAME	-FRAME	JOG								A-IN	A-IN·P	V-IN	V-IN·P	AV-IN	AV-IN·P
E	REV							×1/5,1/10	×1	×2	×9	×−1/5,−1/10	×−1	×−2	×−9						
	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
	※2	※2	※	L	L	※3	※3	※3	※3	※3	※3	※3	※3	※3	※3	※3	※3	※3	※3	※3	※3
	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
	※3	※3	※3	※3	※3	※3	※3	※3	※3	※3	※3	※3	※3	※3	※3	※3	※3	※3	※3	※3	※3
	※4	※4	※4	※4	※4	※4	※4	※4	※4	※4	※4	※4	※4	※4	※4	※4	※4	※4	※4	※4	※4
	※5	※5	※5	※5	※5	※5	※5	※5	※5	※5	※5	※5	※5	※5	※5	※5	※5	※5	※5	※5	※5
	※6	※6	※6	※6	※6	※6	※6	※6	※6	※6	※6	※6	※6	※6	※6	※6	※6	※6	※6	※6	※6
	※7	※7	※7	※7	※7	※7	※7	※7	※7	※7	※7	※7	※7	※7	※7	※7	※7	※7	※7	※7	※7
	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
	H	L	L	L	L	L	H	L	L	L	L	H	H	H	H	L	L	L	L	L	L

※1 "H" when there is a cassette in the cassette compartment and it is down.
※2 "L" when cassette erase prevention claw is not broken.
※3 "H" when linear skate protion is open.
※4 "H" when linear skate portion is closed.
※5 "H" for TV, "L" for VTR.
※6 "H" when linear skate portion is closed, "L" when open.
※7 "H" when linear skate portion is open, "L" when closed.
※8 "L" during threading.
※9 "L" during unthreading.

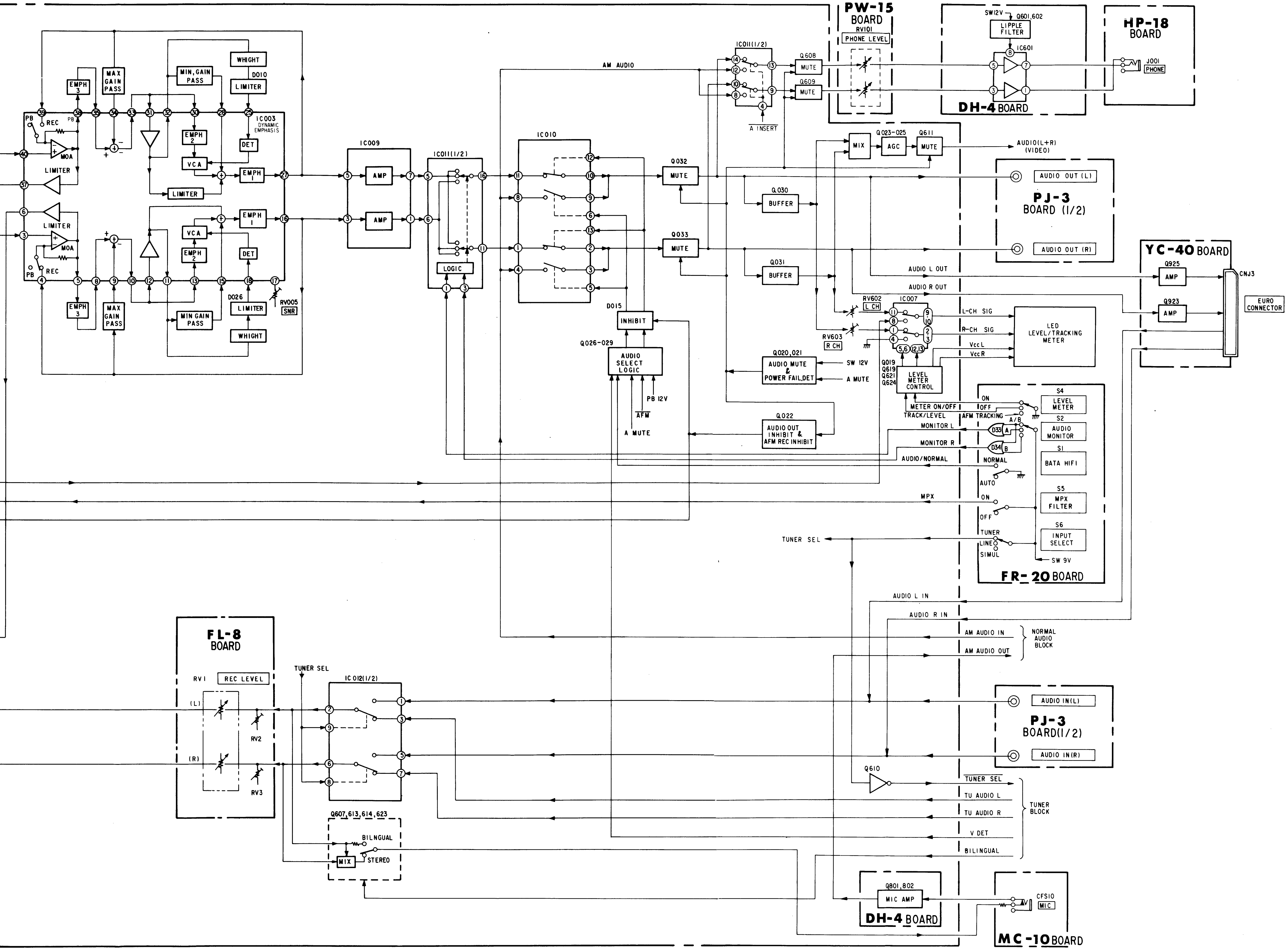
R SERCH		PB	PB·P	REC	REC·P	FRAME	−FRAME	JOG								A-IN	A-IN·P	V-IN	V-IN·P	AV-IN	AV-IN·P
E	REV							×1/5,1/10	×1	×2	×9	×−1/5,−1/10	×−1	×−2	×−9						
	L	L	L	L	L	L	L	L	L	H	L	L	L	L	L	L	L	L	L	L	L
	L	H	H	H	H	H	H	Pulse	H	H	H	Pulse	L	L	L	L	H	L	H	L	H
	L	L	H	L	H	H	H	H	L	L	L	H	L	L	L	L	H	L	H	L	H
	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
	H	L	H	L	L	H	H	H	L	H	H	H	H	H	H	L	H	L	L	L	L
	L	L	L	Pulse	H	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L

3-7. AUDIO BLOCK DIAGRAM

(1) Beta Hi-Fi Audio Block



AF-14 BOARD
a CH HEAD
b CH HEAD
T001
T002
Q003-005,650
a CH PB AMP
Q601
AGC
Q006,007
REC/PB SWITCH
PB 12V
Q008-010,651
b CH PB AMP
Q602
AGC
Q011,012
REC/PB SWITCH
PB 12V
Q501
BUFFER
Q502
BUFFER
CN001
RF a CH
RF b CH
AF PG
REC CURR
AF SWP
CN015
VCA
DOC
Q503
BUFFER
Q627
BUFFER
BPF1
BPF f1 1.44MHz
BPF2
BPF f1 1.44MHz
BPF3
BPF f2 2.1MHz
BPF4
BPF f2 2.1MHz
IC001(1/2)
a CH f1 PB AMP
b CH f1 PB AMP
a CH f2 PB AMP
b CH f2 PB AMP
VCA
D.O DET
AF SWP
RV009
VCA
PB 5V
D601,602
RF DET
Q603,604
RF AMP
IC013,Q625,626
RF DET
RV601
RF DET
RV012
DEM fo L
RV013
PB a CH LEVEL
RV014
PB b CH LEVEL
RV604
DC OFFSET
IC002
LIMITER
DEMOD 1
DEMOD 2
150kHz LPF
10dB AMP
TPG
MUTE
NORMAL
3dB AMP
LPF
S/H
D.O
SW CONT
MUTE
AF SWP
PB 5V
RV008
DEM fo L
RV007
PB a CH LEVEL
RV006
PB b CH LEVEL
RV605
DC OFFSET
IC004
HPF
AFM DET
2 SEC
IC012(1/2)
PB
REC
Q615
Q616
LPF1
LPF
LPF2
Q034~036
20/15kHz SWITCH
Q037~039
PB12V
Q040
LOGIC
TUNER SEL
PB 12V
EMPH 3
MAX GAIN PASS
MOA
LIMITER
Q050 Q605
AFM DET
AFM
D007,008
REC AFM MUTE
D LOCK
AF REC.P
Q018
THERMAL COMPENSTOR
RV001
f1 ADJ
RV002
f1 DEVIATION
Q041
THERMAL COMPENSTOR
RV010
f2 DEVIATION
RV011
f2 ADJ
IC001(1/2)
MOD 1
MOD 2
AGC
REF
RV003
REC CURR
Q016
BUFFER
Q017
BUFFER
LPF
MIX
Q013~015
REC AMP
Q001,002
REC/PB SWITCH
REC·PAUSE
POWER BLOCK
UN-30V
UN 12V
SW 12V
SW 9V
Q042,043
PB 12V SWITCH
PB 12V
Q044
5V REG
SW5V
SERVO/ SYSTEM CONTROL BLOCK
PB+A INS
AF REC·P
PB+V INS
A MUTE
AFM SIG
Q048
REC·PAUSE
A INSERT(IC011④)
A MUTE
AFM
SERVO BLOCK
AF SWP
D LOCK

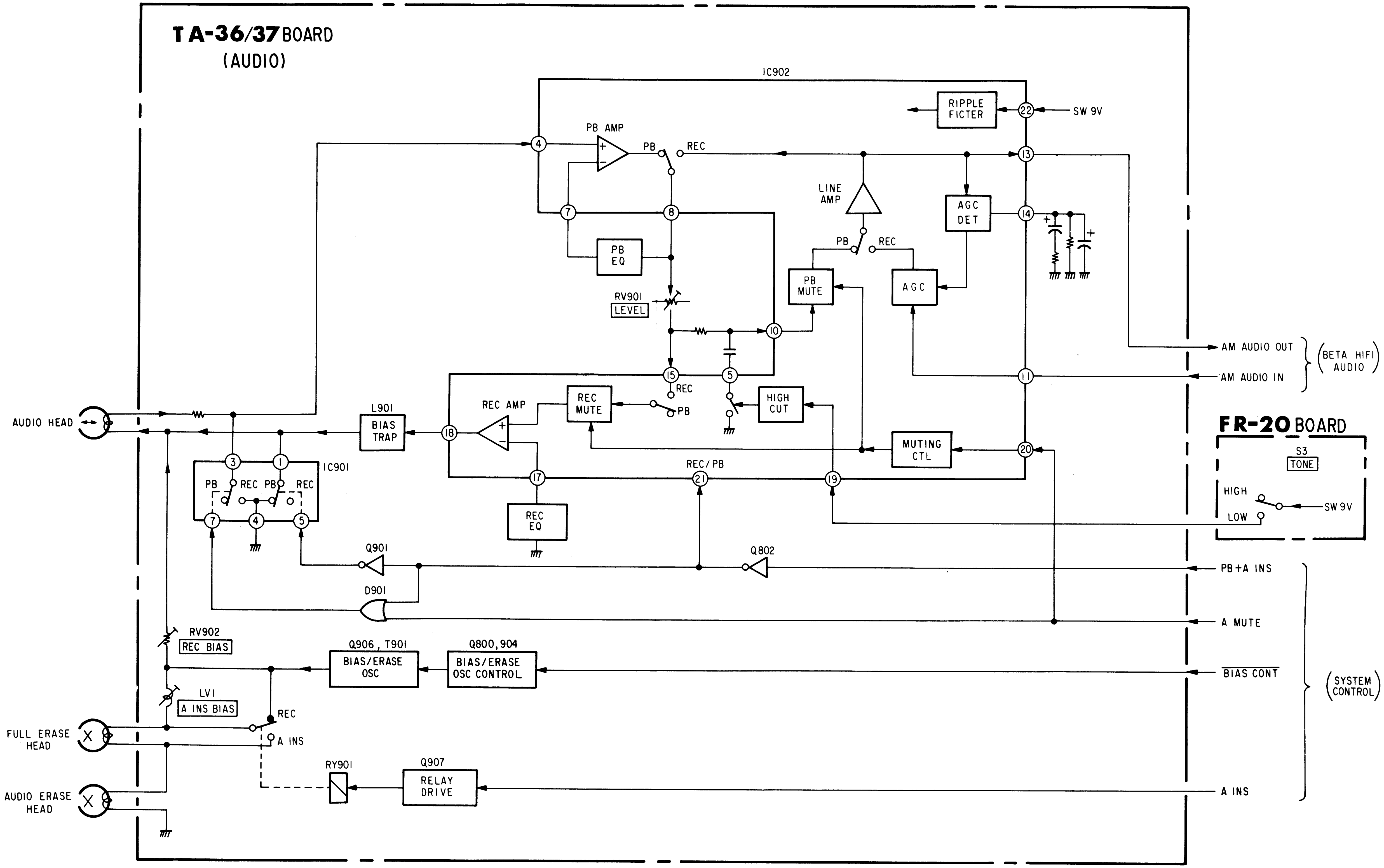

PW-15 BOARD
RV101
PHONE LEVEL
DH-4 BOARD
SW12V
Q601,602
LIPPLE FILTER
IC601
HP-18 BOARD
J001
PHONE
IC011(1/2)
Q608
MUTE
Q609
MUTE
A INSERT
AM AUDIO
WHIGHT
LIMITER
D010
MIN,GAIN PASS
MAX GAIN PASS
EMPH 3
EMPH 2
EMPH 1
VCA
DET
IC003 DYNAMIC EMPHASIS
PB
REC
MOA
LIMITER
D026
RV005
SNR
IC009
AMP
IC011(1/2)
LOGIC
IC010
Q032
MUTE
Q033
MUTE
MIX
Q023-025
AGC
Q611
MUTE
AUDIO(L+R) (VIDEO)
AUDIO OUT (L)
PJ-3 BOARD (1/2)
AUDIO OUT (R)
Q030
BUFFER
Q031
BUFFER
AUDIO L OUT
AUDIO R OUT
YC-40 BOARD
Q925
AMP
Q923
AMP
CNJ3
EURO CONNECTOR
D015
INHIBIT
Q026-029
AUDIO SELECT LOGIC
PB 12V
AFM
A MUTE
RV602
L CH
RV603
R CH
IC007
L-CH SIG
R-CH SIG
VccL
VccR
LED LEVEL/TRACKING METER
Q020,021
AUDIO MUTE & POWER FAIL DET
SW 12V
A MUTE
Q019
Q619
Q621
Q624
LEVEL METER CONTROL
Q022
AUDIO OUT INHIBIT & AFM REC INHIBIT
METER ON/OFF
TRACK/LEVEL
MONITOR L
MONITOR R
AUDIO/NORMAL
ON
OFF
AFM TRACKING
A/B
D33
D34
S4
LEVEL METER
S2
AUDIO MONITOR
S1
BATA HIFI
NORMAL
AUTO
S5
MPX FILTER
S6
INPUT SELECT
TUNER
LINE
SIMUL
SW 9V
FR-20 BOARD
MPX
TUNER SEL
AUDIO L IN
AUDIO R IN
AM AUDIO IN
AM AUDIO OUT
NORMAL AUDIO BLOCK
FL-8 BOARD
RV1
REC LEVEL
(L)
(R)
RV2
RV3
TUNER SEL
IC012(1/2)
AUDIO IN(L)
PJ-3 BOARD(1/2)
AUDIO IN(R)
Q610
TUNER SEL
TU AUDIO L
TU AUDIO R
V DET
BILINGUAL
TUNER BLOCK
Q607,613,614,623
BILNGUAL
STEREO
MIX
Q801,802
MIC AMP
DH-4 BOARD
CFS10
MIC
MC-10 BOARD

(2) Normal Audio Block

3-8.

(1) A

REC,



TA-36/37 BOARD
(AUDIO)
IC902
RIPPLE FICTER
22
SW 9V
PB AMP
4
PB
REC
13
LINE AMP
AGC DET
14
7
8
PB EQ
RV901
LEVEL
PB
REC
PB MUTE
AGC
10
15
5
11
AM AUDIO OUT
AM AUDIO IN
BETA HIFI AUDIO
AUDIO HEAD
L901
BIAS TRAP
18
REC AMP
REC MUTE
REC
PB
HIGH CUT
MUTING CTL
20
FR-20 BOARD
S3
TONE
HIGH
LOW
SW 9V
3
1
IC901
PB
REC
PB
REC
7
4
5
17
REC/PB
21
19
REC EQ
Q901
Q802
D901
PB+A INS
A MUTE
RV902
REC BIAS
Q906, T901
BIAS/ERASE OSC
Q800, 904
BIAS/ERASE OSC CONTROL
BIAS CONT
SYSTEM CONTROL
LV1
A INS BIAS
REC
A INS
FULL ERASE HEAD
RY901
Q907
RELAY DRIVE
A INS
AUDIO ERASE HEAD

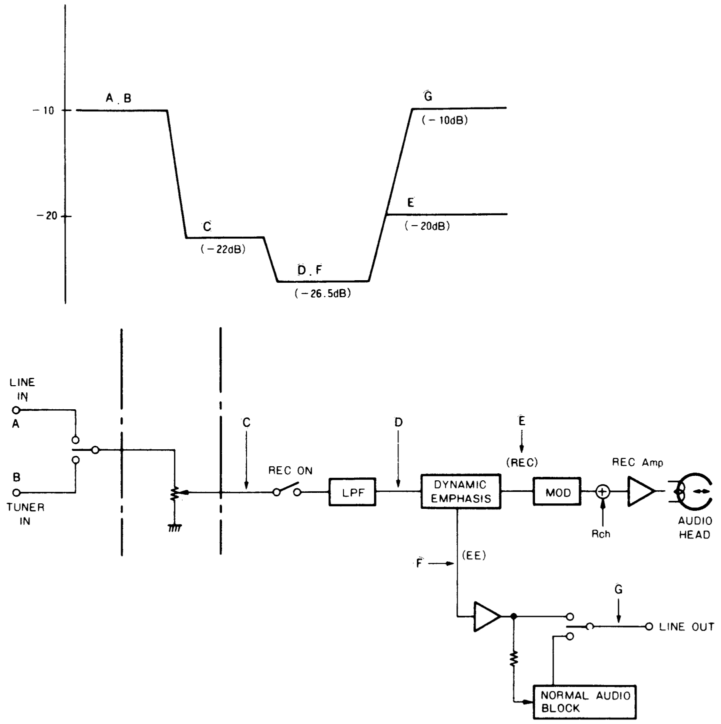
(2) A

PB M

3-8. AUDIO LEVEL DIAGRAM

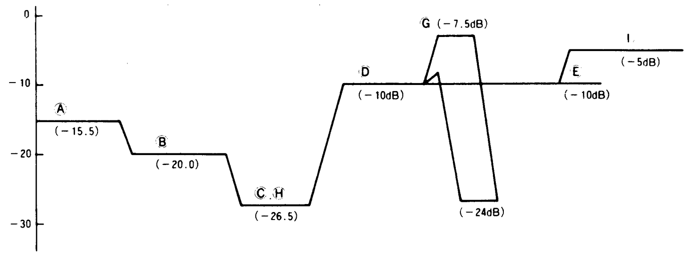
(1) AFM Level Diagram (REC, EE)

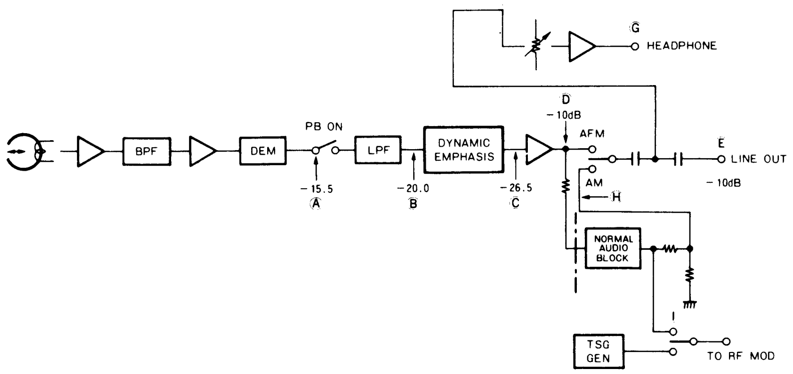
REC, EE MODE


-10
-20
A.B
C
(-22dB)
D.F
(-26.5dB)
G
(-10dB)
E
(-20dB)
LINE IN
A
B
TUNER IN
C
D
E
(REC)
REC ON
LPF
DYNAMIC EMPHASIS
MOD
REC Amp
Rch
AUDIO HEAD
F
(EE)
G
LINE OUT
NORMAL AUDIO BLOCK

(2) AFM Level Diagram (PB)

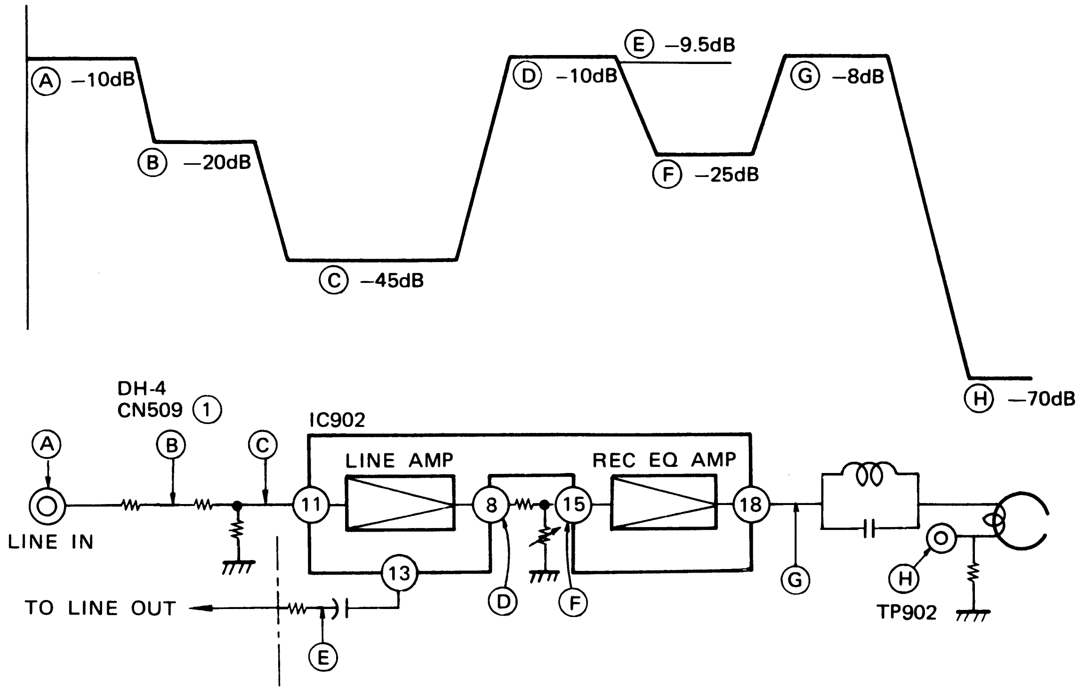
PB MODE




BPF
DEM
PB ON
LPF
DYNAMIC EMPHASIS
-15.5
Ⓐ
-20.0
Ⓑ
-26.5
Ⓒ
Ⓓ
-10dB
AFM
AM
Ⓗ
Ⓖ
HEADPHONE
E
LINE OUT
-10dB
NORMAL AUDIO BLOCK
I
TSG GEN
TO RF MOD

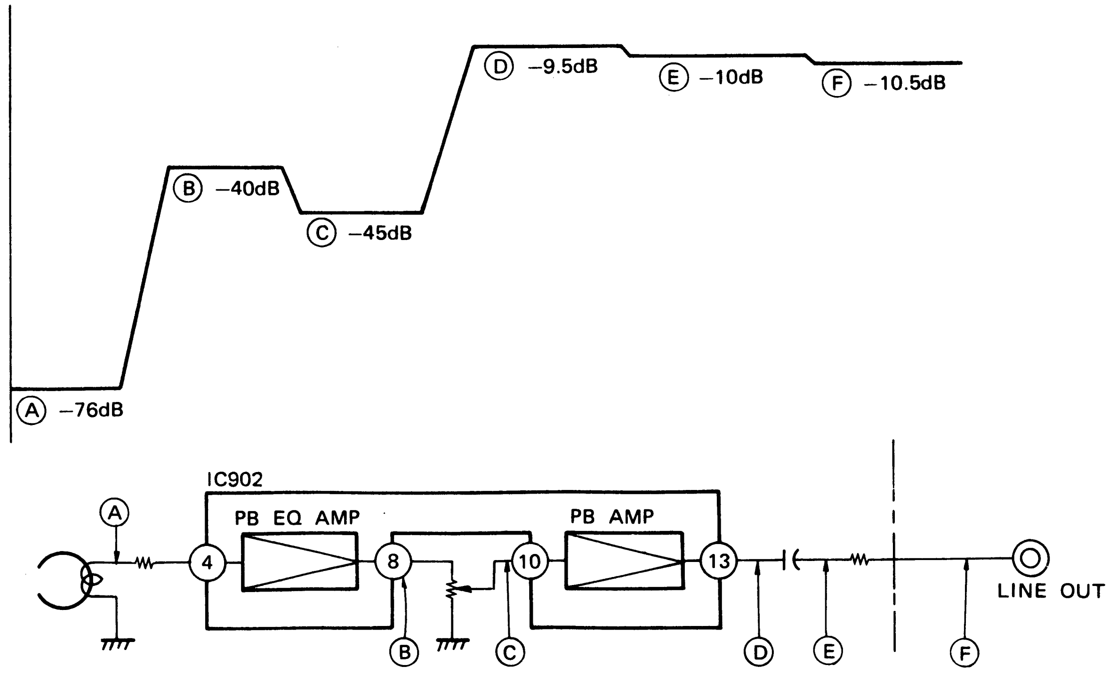
(3) Normal Audio Level Diagram (REC, EE)

REC MODE 0dB = 0.775Vrms f = 333Hz
BIAS OSC: STOPPED

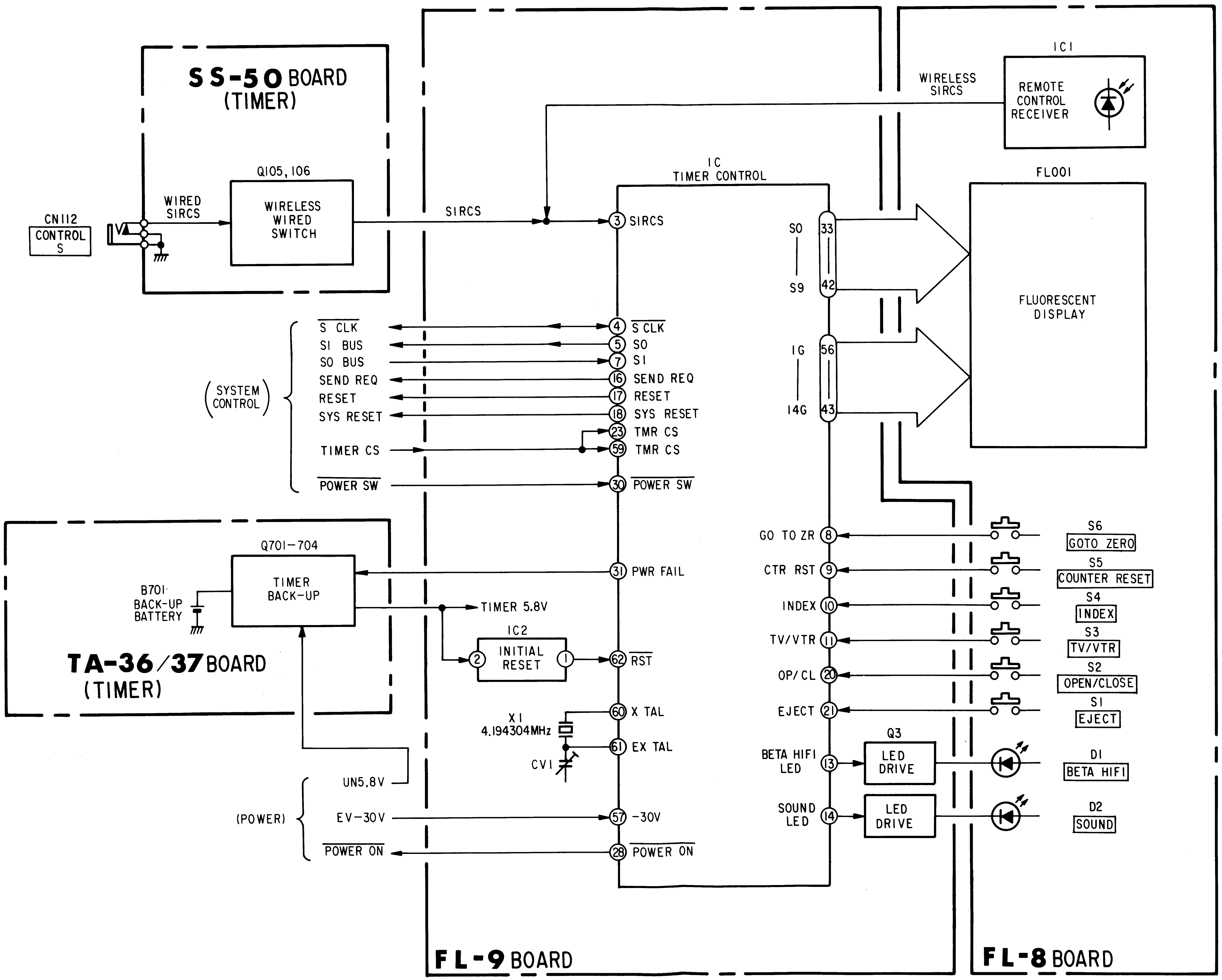

Ⓐ -10dB
Ⓑ -20dB
Ⓒ -45dB
Ⓓ -10dB
Ⓔ -9.5dB
Ⓕ -25dB
Ⓖ -8dB
Ⓗ -70dB
DH-4
CN509 ①
IC902
LINE AMP
REC EQ AMP
Ⓐ
Ⓑ
Ⓒ
LINE IN
11
8
15
18
13
TO LINE OUT
Ⓔ
Ⓓ
Ⓕ
Ⓖ
Ⓗ
TP902

(4) Normal Audio Level Diagram (PB)

PB MODE 0dB = 0.775Vrms f = 333Hz

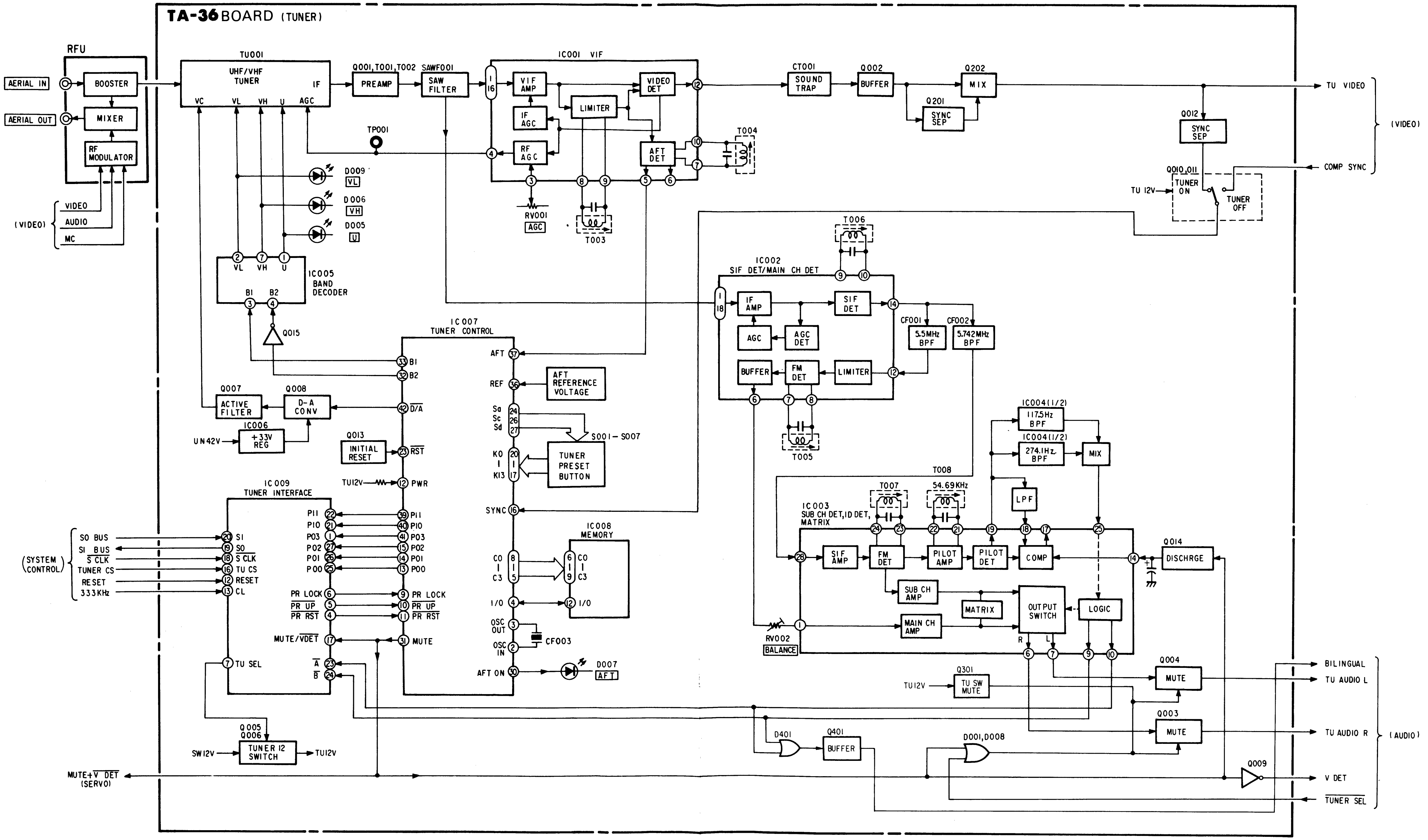

Ⓐ -76dB
Ⓑ -40dB
Ⓒ -45dB
Ⓓ -9.5dB
Ⓔ -10dB
Ⓕ -10.5dB
IC902
PB EQ AMP
PB AMP
Ⓐ
4
8
10
13
Ⓑ
Ⓒ
Ⓓ
Ⓔ
Ⓕ
LINE OUT

3-9. TIMER BLOCK DIAGRAM


SS-50 BOARD (TIMER)
Q105, 106
WIRELESS WIRED SWITCH
WIRED SIRCS
CN112 CONTROL S
SIRCS
WIRELESS SIRCS
IC1
REMOTE CONTROL RECEIVER
IC TIMER CONTROL
③ SIRCS
S0 — S9 33 42
IG — 14G 56 43
FL001
FLUORESCENT DISPLAY
(SYSTEM CONTROL)
S CLK ④ S CLK
SI BUS ⑤ SO
SO BUS ⑦ SI
SEND REQ ⑯ SEND REQ
RESET ⑰ RESET
SYS RESET ⑱ SYS RESET
㉓ TMR CS
TIMER CS ㊾ TMR CS
POWER SW ㉚ POWER SW
TA-36/37 BOARD (TIMER)
Q701-704
TIMER BACK-UP
B701 BACK-UP BATTERY
㉛ PWR FAIL
TIMER 5.8V
IC2 INITIAL RESET ② ①
(62) RST
X1 4.194304MHz
(60) X TAL
(61) EX TAL
CV1
(POWER)
UN5.8V
EV-30V (57) -30V
POWER ON ㉘ POWER ON
GO TO ZR ⑧
CTR RST ⑨
INDEX ⑩
TV/VTR ⑪
OP/CL ⑳
EJECT ㉑
S6 GOTO ZERO
S5 COUNTER RESET
S4 INDEX
S3 TV/VTR
S2 OPEN/CLOSE
S1 EJECT
BETA HIFI LED ⑬
SOUND LED ⑭
Q3
LED DRIVE
LED DRIVE
D1 BETA HIFI
D2 SOUND
FL-9 BOARD
FL-8 BOARD

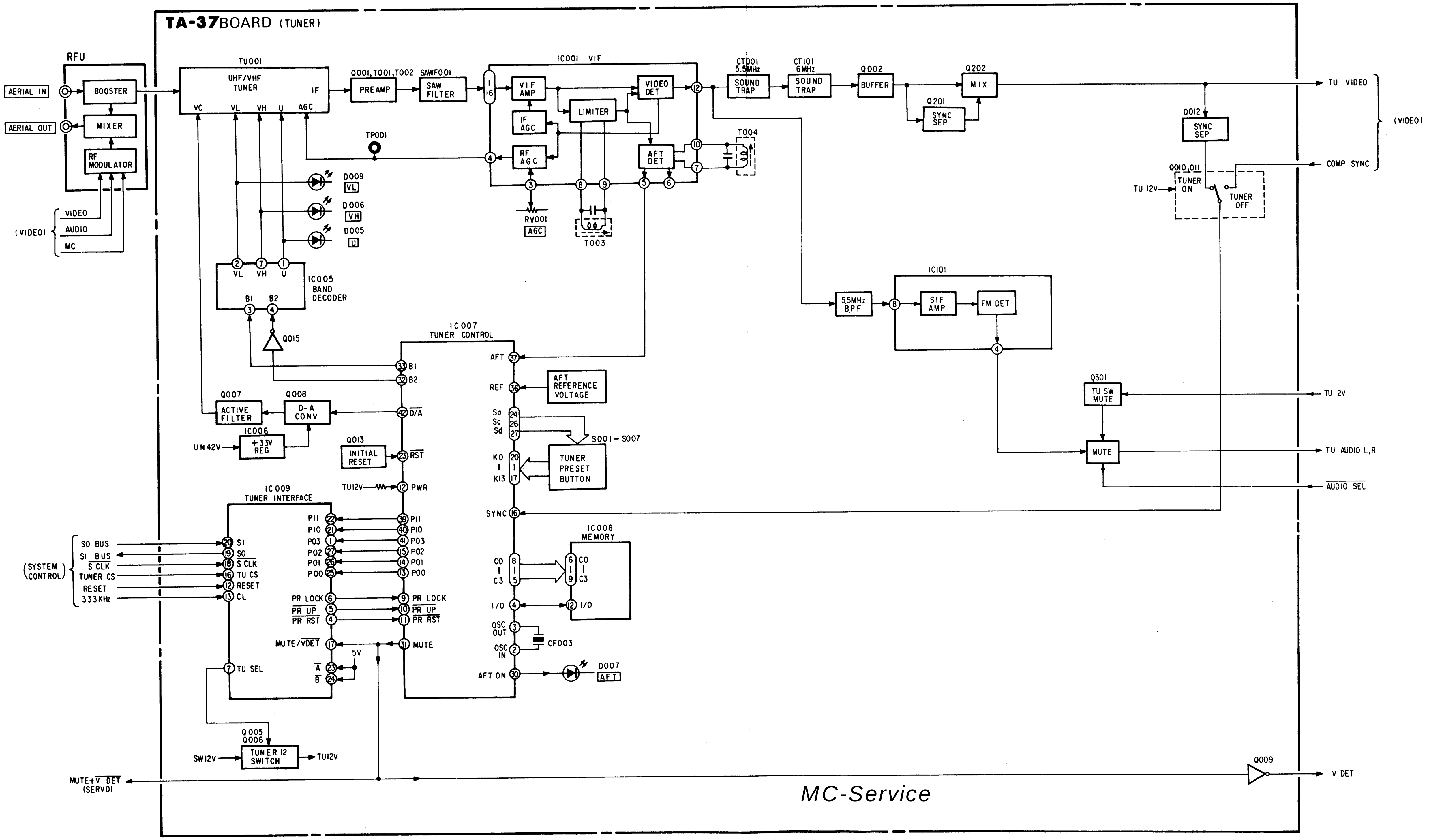
3-10. TUNER BOCK DIAGRAM

(1) ES MODEL

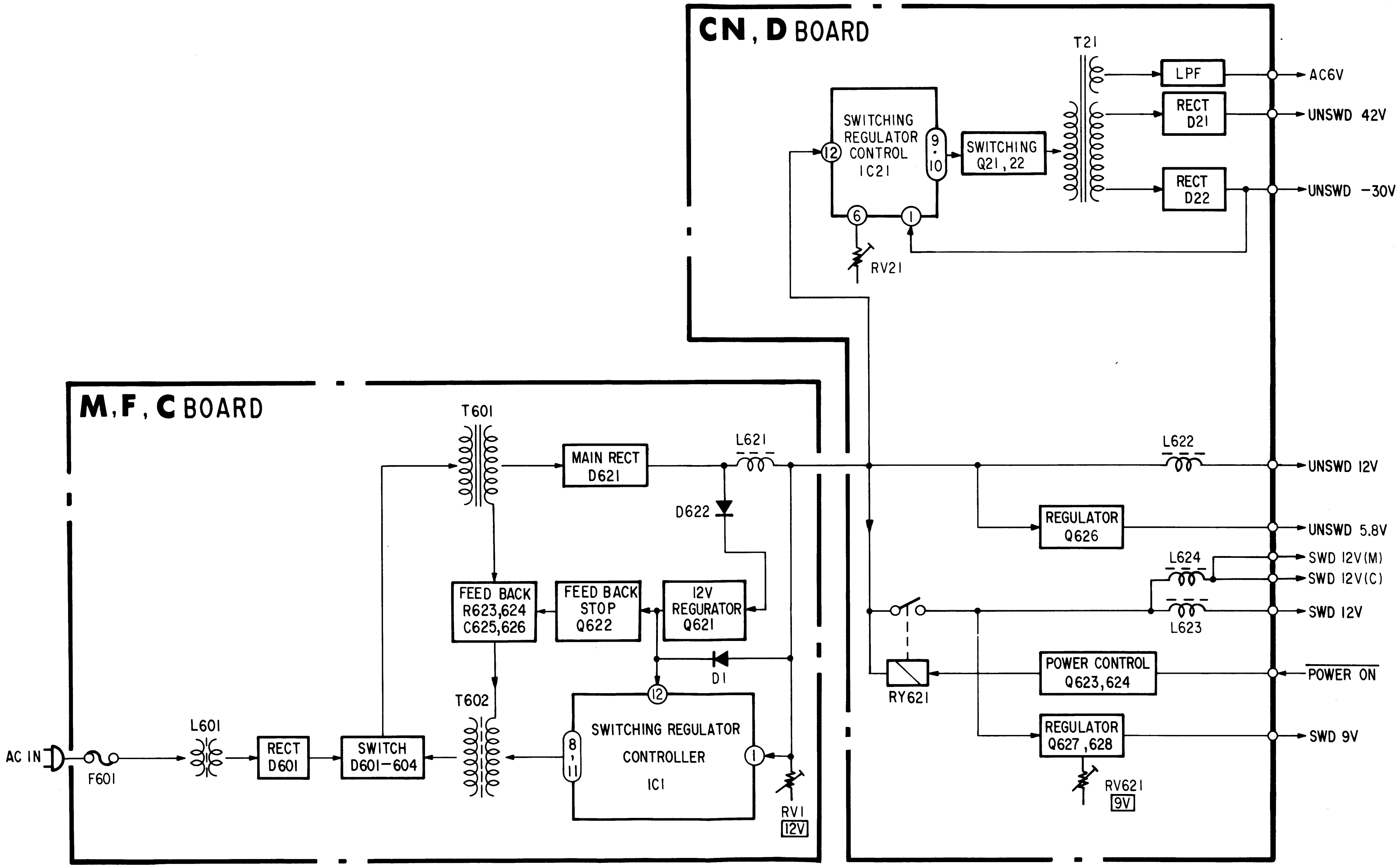


TA-36 BOARD (TUNER)
RFU
AERIAL IN
AERIAL OUT
BOOSTER
MIXER
RF MODULATOR
VIDEO
AUDIO
MC
(VIDEO)
TU001
UHF/VHF TUNER
IF
VC
VL
VH
U
AGC
Q001,T001,T002
PREAMP
SAWF001
SAW FILTER
IC001 VIF
VIF AMP
IF AGC
RF AGC
LIMITER
VIDEO DET
AFT DET
TP001
T004
RV001
AGC
T003
D009
VL
D006
VH
D005
U
IC005
BAND DECODER
B1
B2
Q015
CT001
SOUND TRAP
Q002
BUFFER
Q202
MIX
Q201
SYNC SEP
Q012
SYNC SEP
TU VIDEO
(VIDEO)
COMP SYNC
Q010,011
TUNER ON
TUNER OFF
TU 12V
T006
IC002
SIF DET/MAIN CH DET
IF AMP
SIF DET
AGC
AGC DET
BUFFER
FM DET
LIMITER
CF001
5.5MHz BPF
CF002
5.742MHz BPF
T005
IC007
TUNER CONTROL
AFT
REF
AFT REFERENCE VOLTAGE
Sa
Sc
Sd
S001 – S007
K0
K13
TUNER PRESET BUTTON
SYNC
Q007
ACTIVE FILTER
Q008
D-A CONV
D/A
IC006
+33V REG
UN42V
Q013
INITIAL RESET
RST
TU12V
PWR
IC009
TUNER INTERFACE
P11
P10
P03
P02
P01
P00
PR LOCK
PR UP
PR RST
MUTE/VDET
MUTE
TU SEL
A
B
SO BUS
SI BUS
S CLK
TUNER CS
RESET
333KHz
(SYSTEM CONTROL)
SI
SO
S CLK
TU CS
RESET
CL
IC008
MEMORY
C0
C3
I/O
OSC OUT
OSC IN
CF003
AFT ON
D007
AFT
Q005
Q006
TUNER 12 SWITCH
SW12V
TU12V
MUTE+V DET (SERVO)
IC004(1/2)
117.5Hz BPF
IC004(1/2)
274.1Hz BPF
MIX
LPF
T008
T007
54.69KHz
IC003
SUB CH DET, ID DET, MATRIX
SIF AMP
FM DET
PILOT AMP
PILOT DET
COMP
SUB CH AMP
MATRIX
OUTPUT SWITCH
LOGIC
MAIN CH AMP
RV002
BALANCE
R
L
Q014
DISCHRGE
Q004
MUTE
Q003
MUTE
Q301
TU SW MUTE
TU12V
D401
Q401
BUFFER
D001,D008
Q009
BILINGUAL
TU AUDIO L
TU AUDIO R
(AUDIO)
V DET
TUNER SEL

(2) E MODEL


TA-37BOARD (TUNER)
RFU
AERIAL IN
BOOSTER
AERIAL OUT
MIXER
RF MODULATOR
(VIDEO)
VIDEO
AUDIO
MC
TU001
UHF/VHF TUNER
IF
VC
VL
VH
U
AGC
Q001,T001,T002
PREAMP
SAWF001
SAW FILTER
TP001
D009
VL
D006
VH
D005
U
IC005 BAND DECODER
B1
B2
Q015
IC001 VIF
VIF AMP
IF AGC
RF AGC
LIMITER
VIDEO DET
AFT DET
RV001
AGC
T003
T004
CT001 5.5MHz
SOUND TRAP
CT101 6MHz
SOUND TRAP
Q002
BUFFER
Q201
SYNC SEP
Q202
MIX
TU VIDEO
(VIDEO)
COMP SYNC
Q012
SYNC SEP
Q010,011
TU 12V
TUNER ON
TUNER OFF
IC101
5.5MHz B.P.F
SIF AMP
FM DET
IC007 TUNER CONTROL
AFT
REF
AFT REFERENCE VOLTAGE
Sa
Sc
Sd
S001 – S007
K0
K13
TUNER PRESET BUTTON
SYNC
Q007
ACTIVE FILTER
Q008
D-A CONV
D/A
IC006
+33V REG
UN42V
Q013
INITIAL RESET
RST
TU12V
PWR
IC009 TUNER INTERFACE
P11
P10
P03
P02
P01
P00
SO BUS
SI BUS
S CLK
TUNER CS
RESET
333KHz
(SYSTEM CONTROL)
SI
SO
S CLK
TU CS
RESET
CL
PR LOCK
PR UP
PR RST
MUTE/VDET
MUTE
5V
A
B
TU SEL
IC008 MEMORY
C0
C3
I/O
OSC OUT
OSC IN
CF003
AFT ON
D007
AFT
Q301
TU SW MUTE
TU 12V
MUTE
TU AUDIO L,R
AUDIO SEL
Q005
Q006
TUNER 12 SWITCH
SW12V
TU12V
MUTE+V DET (SERVO)
Q009
V DET

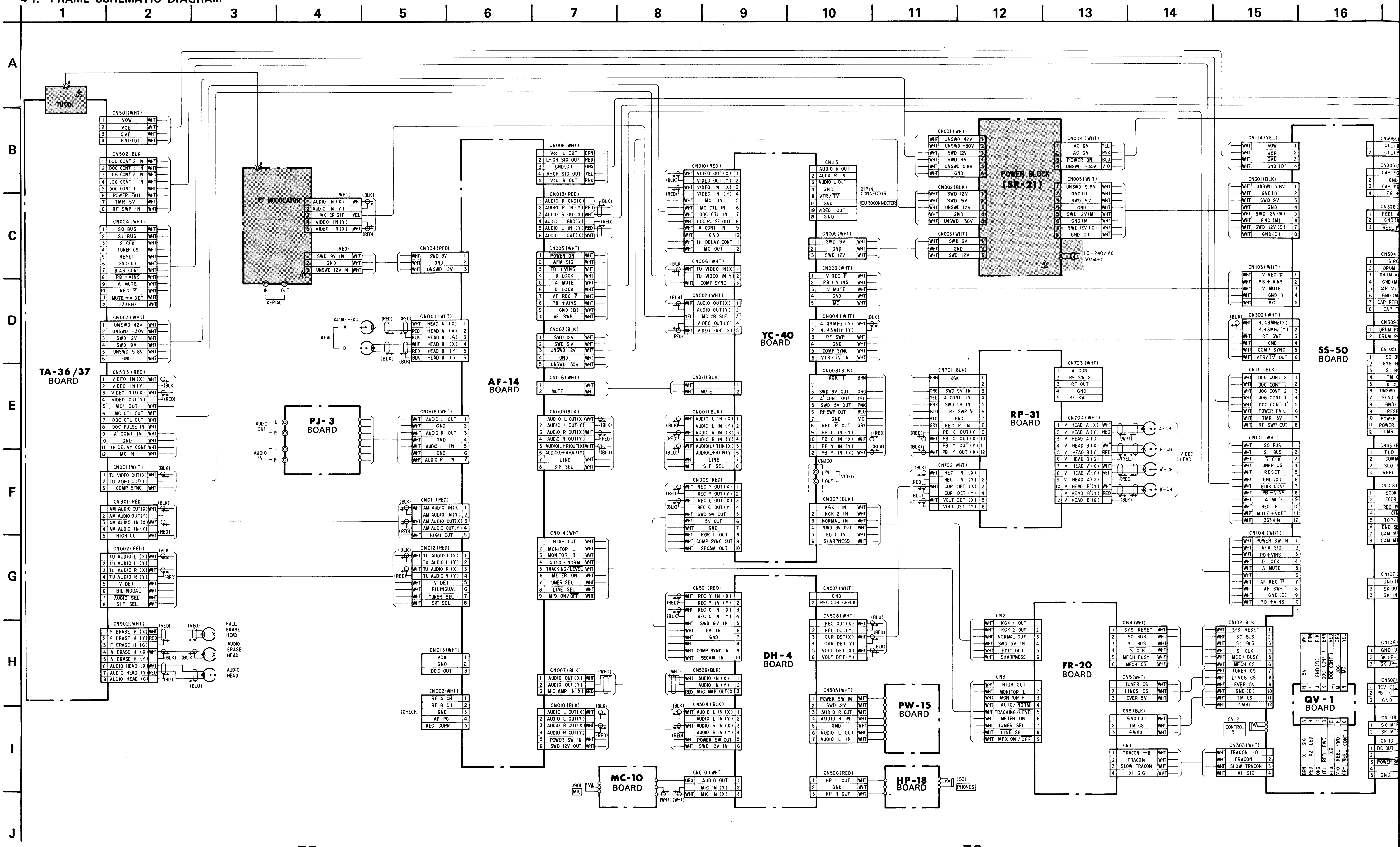
3-11. POWER BLOCK DIAGRAM

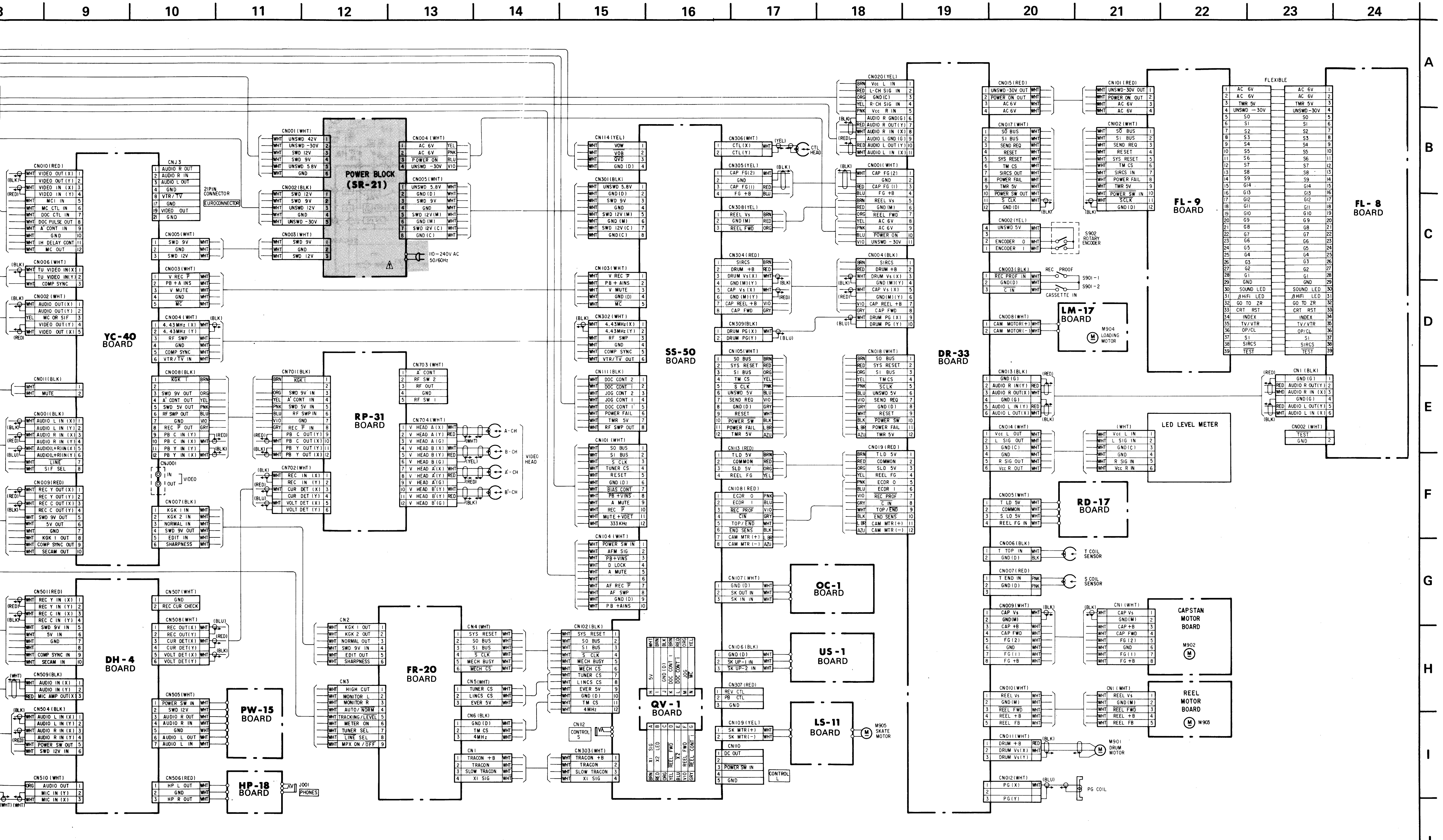

CN, D BOARD
T21
SWITCHING REGULATOR CONTROL IC21
12
9 · 10
6
1
SWITCHING Q21, 22
LPF
RECT D21
RECT D22
RV21
AC6V
UNSWD 42V
UNSWD -30V
M, F, C BOARD
T601
MAIN RECT D621
L621
D622
FEED BACK R623,624 C625,626
FEED BACK STOP Q622
12V REGURATOR Q621
D1
T602
12
SWITCHING REGULATOR CONTROLLER IC1
8 , 11
1
RV1
12V
AC IN
F601
L601
RECT D601
SWITCH D601-604
L622
UNSWD 12V
REGULATOR Q626
UNSWD 5.8V
L624
SWD 12V(M)
SWD 12V(C)
L623
SWD 12V
RY621
POWER CONTROL Q623,624
POWER ON
REGULATOR Q627,628
SWD 9V
RV621
9V

SECTION 4

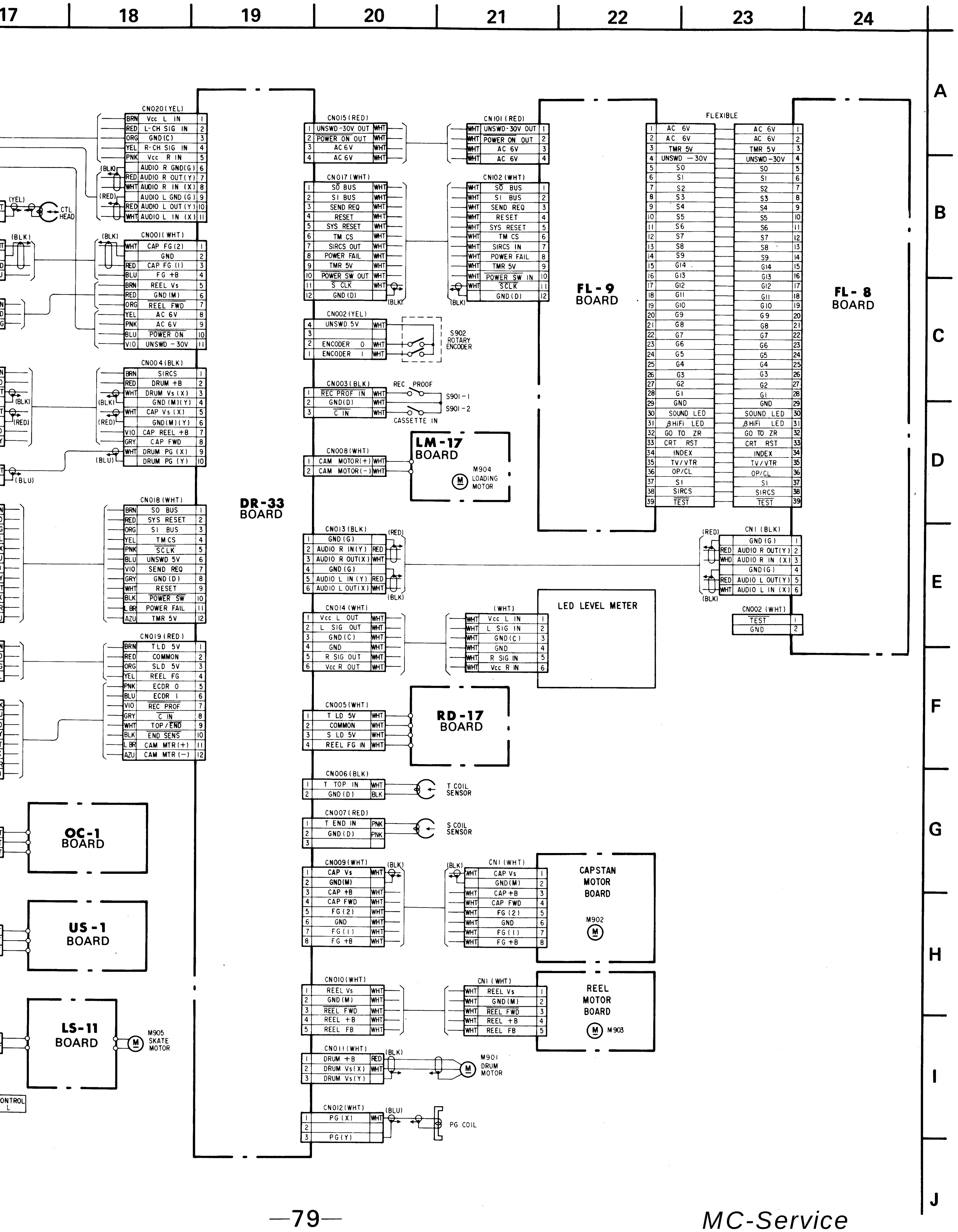
SCHEMATIC DIAGRAM, PRINTED WIRING BOARDS

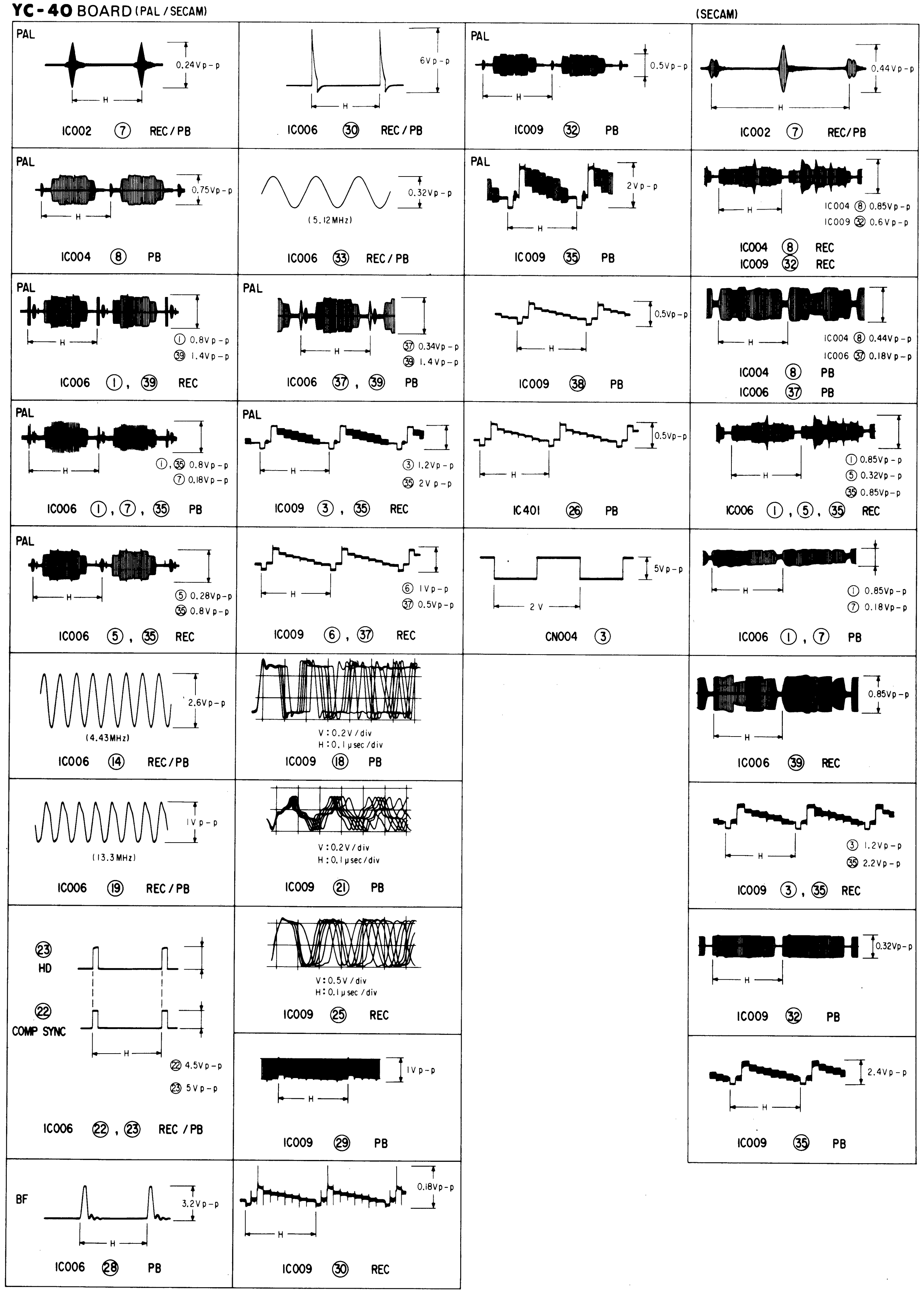
4-1. FRAME SCHEMATIC DIAGRAM

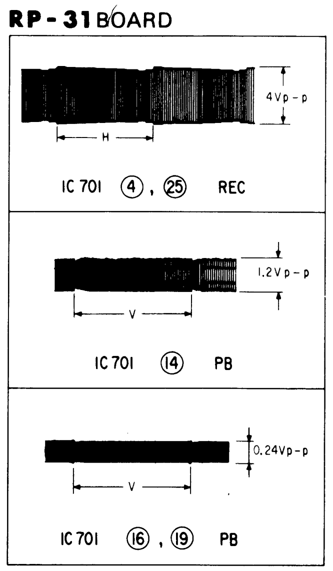

TU001
TA-36/37 BOARD
CN501(WHT)
CN502(BLK)
CN004(WHT)
CN003(WHT)
CN503(RED)
CN001(WHT)
CN901(RED)
CN002(RED)
CN902(WHT)
FULL ERASE HEAD
AUDIO ERASE HEAD
AUDIO HEAD
RF MODULATOR
IN
OUT
AERIAL
PJ-3 BOARD
AUDIO OUT
AUDIO IN
AUDIO HEAD
AFM
AF-14 BOARD
CN008(WHT)
CN013(RED)
CN005(WHT)
CN003(BLK)
CN016(WHT)
CN009(BLK)
CN014(WHT)
CN007(BLK)
CN010(BLK)
CN015(WHT)
CN002(WHT)
(CHECK)
YC-40 BOARD
CN010(RED)
CN006(WHT)
CN002(WHT)
CN011(BLK)
CN001(BLK)
CN009(RED)
CNJ3
21PIN CONNECTOR
EUROCONNECTOR
CNJ001
VIDEO
DH-4 BOARD
CN501(RED)
CN509(BLK)
CN504(BLK)
CN510(WHT)
MC-10 BOARD
J901 MIC
PW-15 BOARD
HP-18 BOARD
J001 PHONES
POWER BLOCK (SR-21)
110-240V AC 50/60Hz
RP-31 BOARD
VIDEO HEAD
FR-20 BOARD
CONTROL S
QV-1 BOARD
SS-50 BOARD
MC-Service

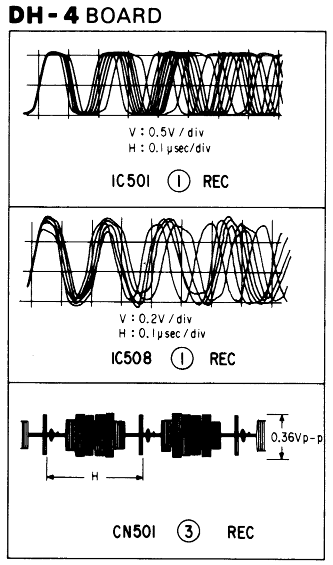


YC-40 BOARD
DH-4 BOARD
POWER BLOCK (SR-21)
110-240V AC 50/60Hz
RP-31 BOARD
FR-20 BOARD
PW-15 BOARD
HP-18 BOARD
PHONES
21PIN CONNECTOR
EUROCONNECTOR
VIDEO HEAD
SS-50 BOARD
QV-1 BOARD
OC-1 BOARD
US-1 BOARD
LS-11 BOARD
M905 SKATE MOTOR
CONTROL S
CONTROL L
CTL HEAD
DR-33 BOARD
LM-17 BOARD
M904 LOADING MOTOR
S902 ROTARY ENCODER
REC PROOF
S901-1
S901-2
CASSETTE IN
RD-17 BOARD
T COIL SENSOR
S COIL SENSOR
CAPSTAN MOTOR BOARD
M902
REEL MOTOR BOARD
M903
M901 DRUM MOTOR
PG COIL
LED LEVEL METER
FL-9 BOARD
FL-8 BOARD
FLEXIBLE
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
A
B
C
D
E
F
G
H
I
J


17
18
19
20
21
22
23
24
A
B
C
D
E
F
G
H
I
J
CN020 (YEL)
CN001 (WHT)
CN004 (BLK)
CN018 (WHT)
CN019 (RED)
CTL HEAD
DR-33 BOARD
CN015 (RED)
CN017 (WHT)
CN002 (YEL)
S902 ROTARY ENCODER
CN003 (BLK)
REC PROOF
S901-1
S901-2
CASSETTE IN
CN008 (WHT)
LM-17 BOARD
M904 LOADING MOTOR
CN013 (BLK)
CN014 (WHT)
CN005 (WHT)
RD-17 BOARD
CN006 (BLK)
T COIL SENSOR
CN007 (RED)
S COIL SENSOR
CN009 (WHT)
CN010 (WHT)
CN011 (WHT)
M901 DRUM MOTOR
CN012 (WHT)
PG COIL
CN101 (RED)
CN102 (WHT)
FL-9 BOARD
FLEXIBLE
FL-8 BOARD
CN1 (BLK)
CN002 (WHT)
LED LEVEL METER
CN1 (WHT)
CAPSTAN MOTOR BOARD
M902
REEL MOTOR BOARD
M903
OC-1 BOARD
US-1 BOARD
LS-11 BOARD
M905 SKATE MOTOR
CONTROL L

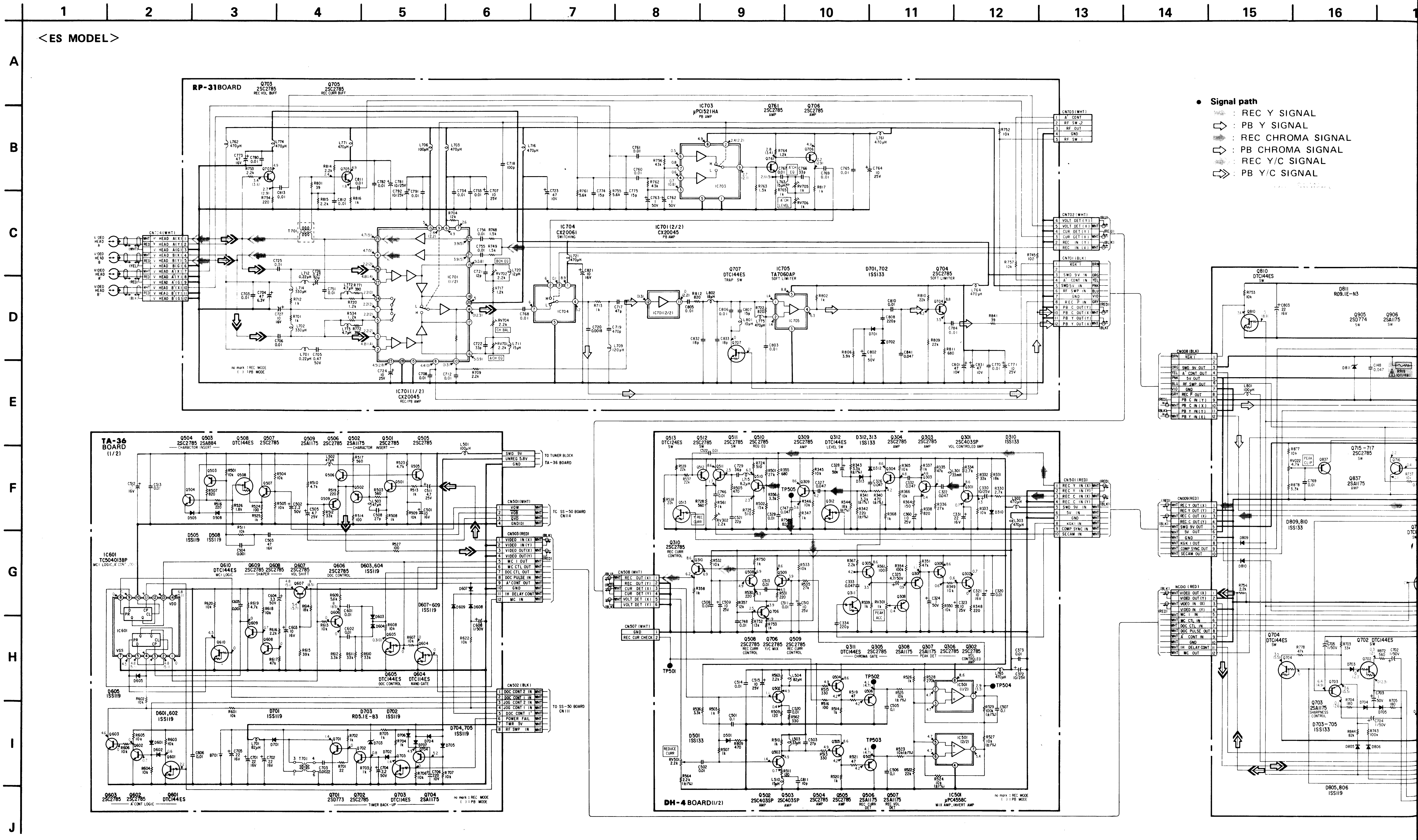

YC-40 BOARD (PAL/SECAM)
(SECAM)
PAL
IC002 ⑦ REC/PB 0.24Vp-p H
IC004 ⑧ PB 0.75Vp-p
IC006 ①, ㊴ REC ① 0.8Vp-p ㊴ 1.4Vp-p
IC006 ①, ⑦, ㉟ PB ①, ㉟ 0.8Vp-p ⑦ 0.18Vp-p
IC006 ⑤, ㉟ REC ⑤ 0.28Vp-p ㉟ 0.8Vp-p
IC006 ⑭ REC/PB 2.6Vp-p (4.43MHz)
IC006 ⑲ REC/PB 1Vp-p (13.3MHz)
㉓ HD
㉒ COMP SYNC
IC006 ㉒, ㉓ REC/PB ㉒ 4.5Vp-p ㉓ 5Vp-p
BF
IC006 ㉘ PB 3.2Vp-p
IC006 ㉚ REC/PB 6Vp-p
IC006 ㉝ REC/PB 0.32Vp-p (5.12MHz)
IC006 ㊲, ㊴ PB ㊲ 0.34Vp-p ㊴ 1.4Vp-p
IC009 ③, ㉟ REC ③ 1.2Vp-p ㉟ 2Vp-p
IC009 ⑥, ㊲ REC ⑥ 1Vp-p ㊲ 0.5Vp-p
IC009 ⑱ PB V: 0.2V/div H: 0.1μsec/div
IC009 ㉑ PB V: 0.2V/div H: 0.1μsec/div
IC009 ㉕ REC V: 0.5V/div H: 0.1μsec/div
IC009 ㉙ PB 1Vp-p
IC009 ㉚ REC 0.18Vp-p
IC009 ㉜ PB 0.5Vp-p
IC009 ㉟ PB 2Vp-p
IC009 ㊳ PB 0.5Vp-p
IC401 ㉖ PB 0.5Vp-p
CN004 ③ 5Vp-p 2V
IC002 ⑦ REC/PB 0.44Vp-p
IC004 ⑧ REC IC009 ㉜ REC IC004 ⑧ 0.85Vp-p IC009 ㉜ 0.6Vp-p
IC004 ⑧ PB IC006 ㊲ PB IC004 ⑧ 0.44Vp-p IC006 ㊲ 0.18Vp-p
IC006 ①, ⑤, ㉟ REC ① 0.85Vp-p ⑤ 0.32Vp-p ㉟ 0.85Vp-p
IC006 ①, ⑦ PB ① 0.85Vp-p ⑦ 0.18Vp-p
IC006 ㊴ REC 0.85Vp-p
IC009 ③, ㉟ REC ③ 1.2Vp-p ㉟ 2.2Vp-p
IC009 ㉜ PB 0.32Vp-p
IC009 ㉟ PB 2.4Vp-p


RP-31 BOARD
IC701 ④, ㉕ REC 4Vp-p H
IC701 ⑭ PB 1.2Vp-p V
IC701 ⑯, ⑲ PB 0.24Vp-p V

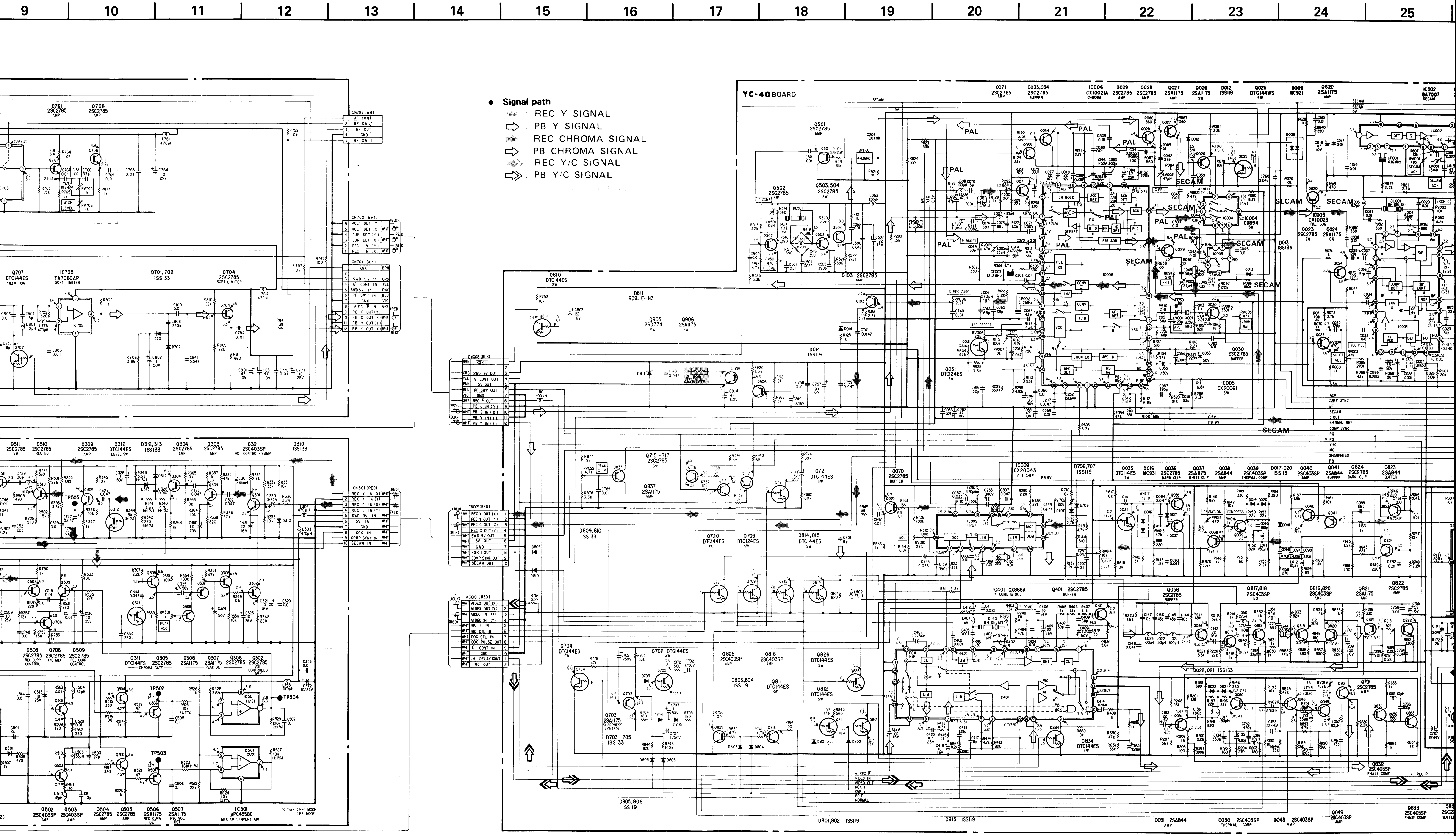

DH-4 BOARD
IC501 ① REC V: 0.5V/div H: 0.1μsec/div
IC508 ① REC V: 0.2V/div H: 0.1μsec/div
CN501 ③ REC 0.36Vp-p H

4-2. ES MODEL; YC-40 (Y/CHROMA SIGNAL PROCESS), RP-31 (VIDEO SIGNAL REC/PB AMP), TA-36 (TUNER, AUDIO), DH-4 (A/V HEAD AMP) SCHEMATIC DIAGRAMS

– Ref. No. YC-40 BOARD: 1,000 series, RP-31 BOARD: 6,000 series, TA-36 BOARD: 4,000 series, DH-4 BOARD: 7,000 series –



<ES MODEL>
RP-31 BOARD
TA-36 BOARD (1/2)
DH-4 BOARD (1/2)
IC703 μPC1521HA PB AMP
IC704 CX20061 SWITCHING
IC701 (1/2) CX20045 REC/PB AMP
IC701 (2/2) CX20045 PB AMP
IC705 TA7060AP
IC601 TC5040I3BP
IC501 μPC4558C MIX AMP, INVERT AMP
VIDEO HEAD A
VIDEO HEAD B
VIDEO HEAD A'
VIDEO HEAD B'
TO TUNER BLOCK TA-36 BOARD
TO SS-50 BOARD CN114
TO SS-50 BOARD CN111
TP501
TP502
TP503
TP504
TP505
no mark : REC MODE ( ) : PB MODE
● Signal path
: REC Y SIGNAL
: PB Y SIGNAL
: REC CHROMA SIGNAL
: PB CHROMA SIGNAL
: REC Y/C SIGNAL
: PB Y/C SIGNAL


9
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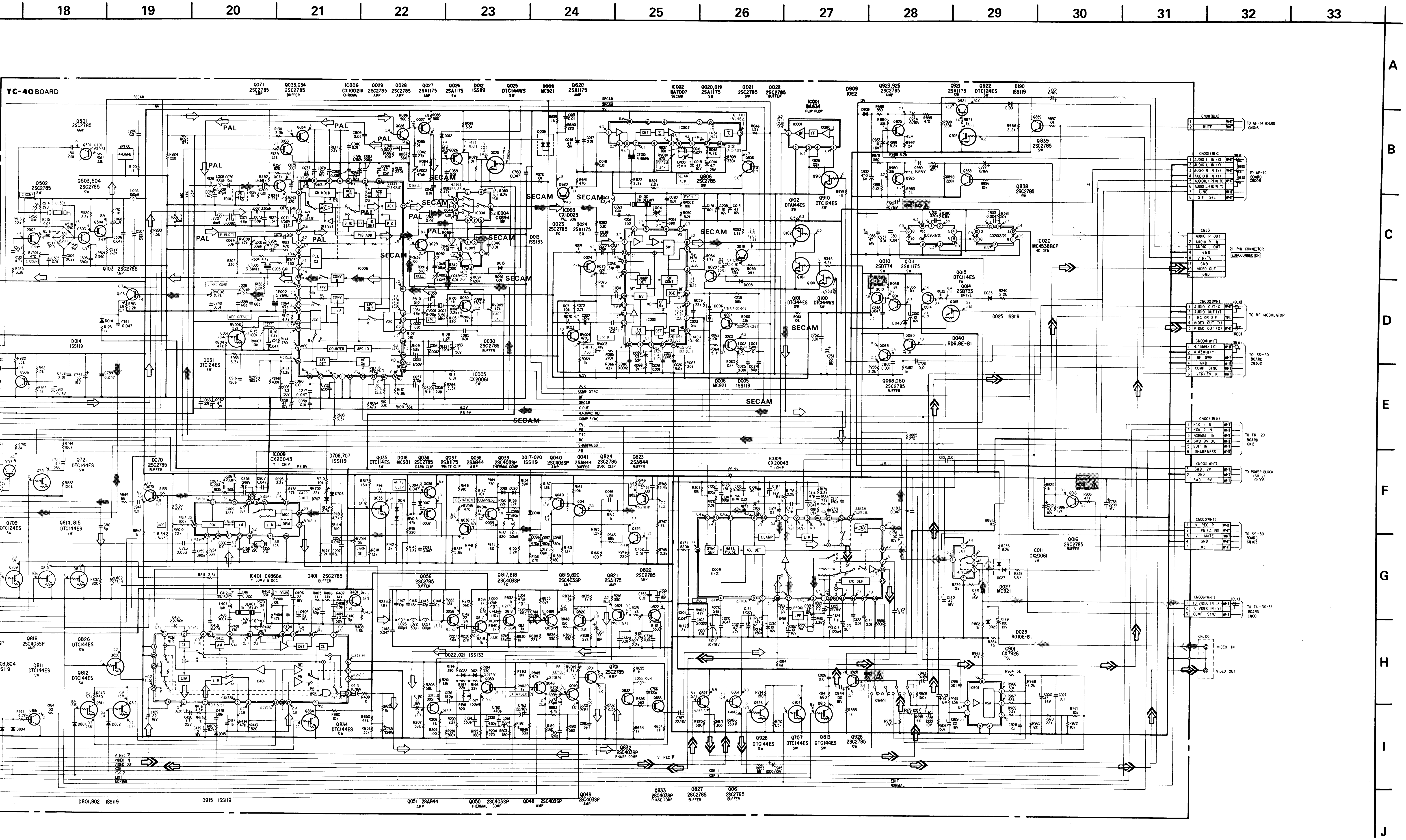
● Signal path
: REC Y SIGNAL
: PB Y SIGNAL
: REC CHROMA SIGNAL
: PB CHROMA SIGNAL
: REC Y/C SIGNAL
: PB Y/C SIGNAL
YC-40 BOARD
CN703 (WHT)
CN702 (WHT)
CN701 (BLK)
CN501 (RED)
CN008 (BLK)
CN009 (RED)
NC010 (RED)
IC705 TA7060AP
IC501 μPC4558C MIX AMP, INVERT AMP
IC006 CX10021A CHROMA
IC009 CX20043 Y 1 CHIP
IC401 CX866A Y COMB & DOC
IC005 CX20061
IC003 CX10023
IC004 CX894
IC002 BA7007 SECAM
TP502
TP503
TP504
TP505
PAL
SECAM
no mark : REC MODE
( ) : PB MODE


YC-40 BOARD
IC006 CX10021A CHROMA
IC002 BA7007 SECAM
IC001 BA634 FLIP FLOP
IC003 CX10023
IC004 CX894
IC005 CX20061
IC020 MC4538BCP HD GEN
IC009 CX20043 Y I CHIP
IC401 CX866A Y COMB & DOC
IC011 CX20061 SW
IC901 CX7926 TSG
PAL
SECAM
CN001(BLK) TO AF-14 BOARD CN016
CN001(BLK) TO AF-14 BOARD CN009
CNJ3 21 PIN CONNECTOR EUROCONNECTOR
CN002(WHT) TO RF MODULATOR
CN004(WHT) TO SS-50 BOARD CN302
CN007(BLK) TO FR-20 BOARD CN2
CN005(WHT) TO POWER BLOCK (SR-21) CN003
CN003(WHT) TO SS-50 BOARD CN103
CN006(WHT) TO TA-36/37 BOARD CN001
CNJ001 VIDEO IN VIDEO OUT
18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33
A B C D E F G H I J

MC-Service

ES MODEL; YC-40 (Y/CHROMA SIGNAL PROCESS), RP-31 (VIDEO SIGNAL REC/PB AMP), TA-36 (TUNER, AUDIO), DH-4 (A/V HEAD AMP) PRINTED WIRING BOARDS

– Ref. No. YC-40 BOARD: 1,000 series, RP-31 BOARD: 6,000 series, TA-36 BOARD: 4,000 series, DH-4 BOARD: 7,000 series –

Note on Schematic Diagram:

- All resistors are in ohms, $^1/_6$W unless otherwise noted. kΩ: 1000 Ω, MΩ: 1000 kΩ
- All capacitors are in μF unless otherwise noted. p: μμF 50WV or less are not indicated except for electrolytics.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ─[▭]─ : nonflammable resistor.
- ─[∿]─ : fusible resistor.
- The red lines show the main voltages.
- All voltages are dc measured with a VOM (10 MΩ).
- ▬ : B+ bus.

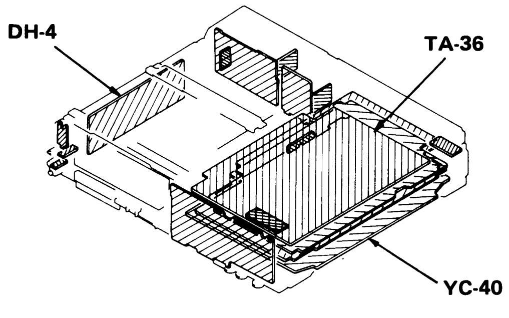
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

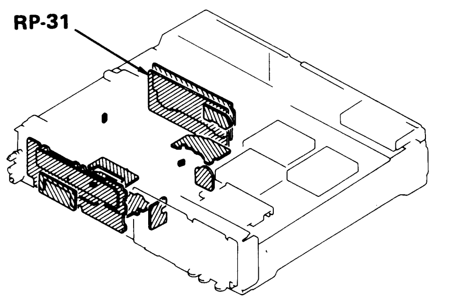
Note on Printed Wiring Board:

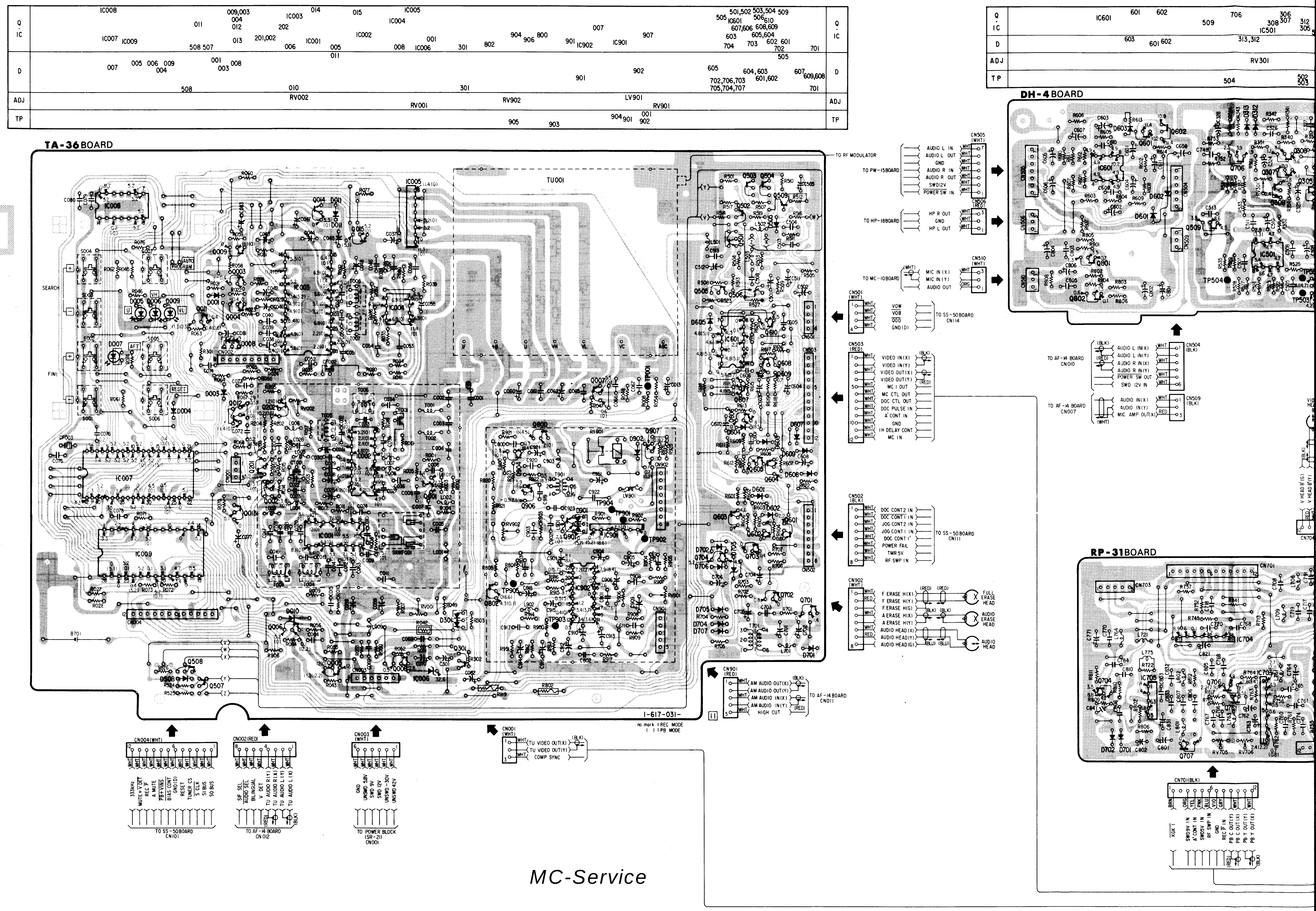
- ○── : Indicates a leadwire mounted on the component side.
- ●── : Indicates a leadwire mounted on the printed side.
- ▨ : soldering side.
- ░ : B+ pattern

- Digital transistor (YC-40: Q15, 25, 31, 35, 100, 101, 102, 702, 704, 707, 709, 720, 721, 810, 811, 812, 813, 814, 815, 826, 834, 910, 922, 926. RP-31: Q707. DH-4: Q311, 312. TA-36: Q003, 004, 006, 013, 014, 015, 301, 508, 601, 604, 605, 610, 703, 800, 802, 901) transistors with resistors.
  Refer to the YC-40, RP-31, DH-4, TA-36 boards schematic diagram for digital transistor.

When indicating parts by reference number, please include the board name.


DH-4
TA-36
YC-40



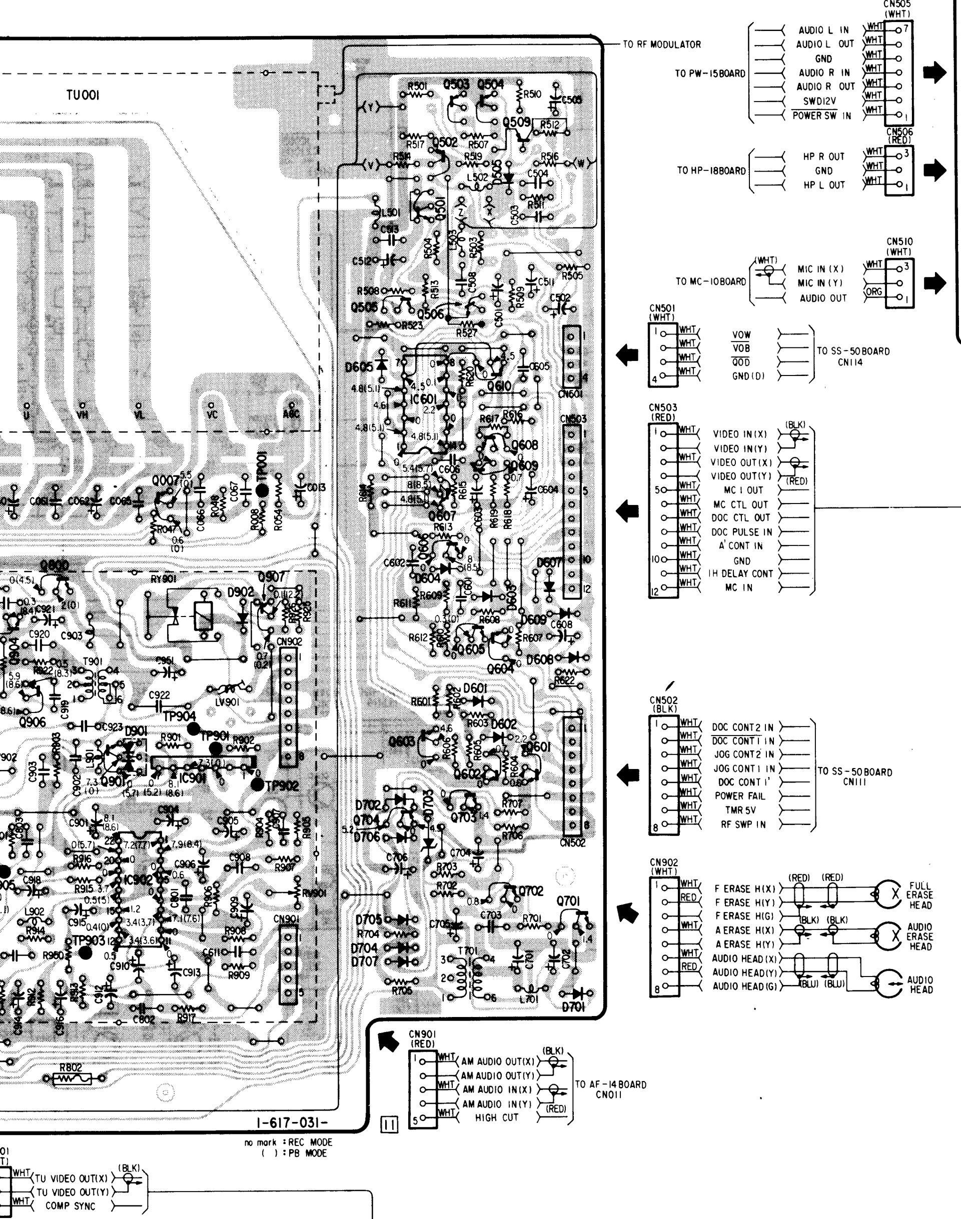

TA-36 BOARD
TU001
1-617-031-
no mark : REC MODE
( ) : PB MODE
CN004 (WHT)
TO SS-50 BOARD CN101
CN002 (RED)
TO AF-14 BOARD CN012
CN003 (WHT)
TO POWER BLOCK (SR-21) CN001
CN001 (WHT)
TU VIDEO OUT(X)
TU VIDEO OUT(Y)
COMP SYNC
TO RF MODULATOR
TO PW-15 BOARD
TO HP-18 BOARD
TO MC-10 BOARD
TO SS-50 BOARD CN114
TO SS-50 BOARD CN111
CN901 (RED)
TO AF-14 BOARD CN011
FULL ERASE HEAD
AUDIO ERASE HEAD
AUDIO HEAD
DH-4 BOARD
TO AF-14 BOARD CN010
TO AF-14 BOARD CN007
RP-31 BOARD
CN701 (BLK)

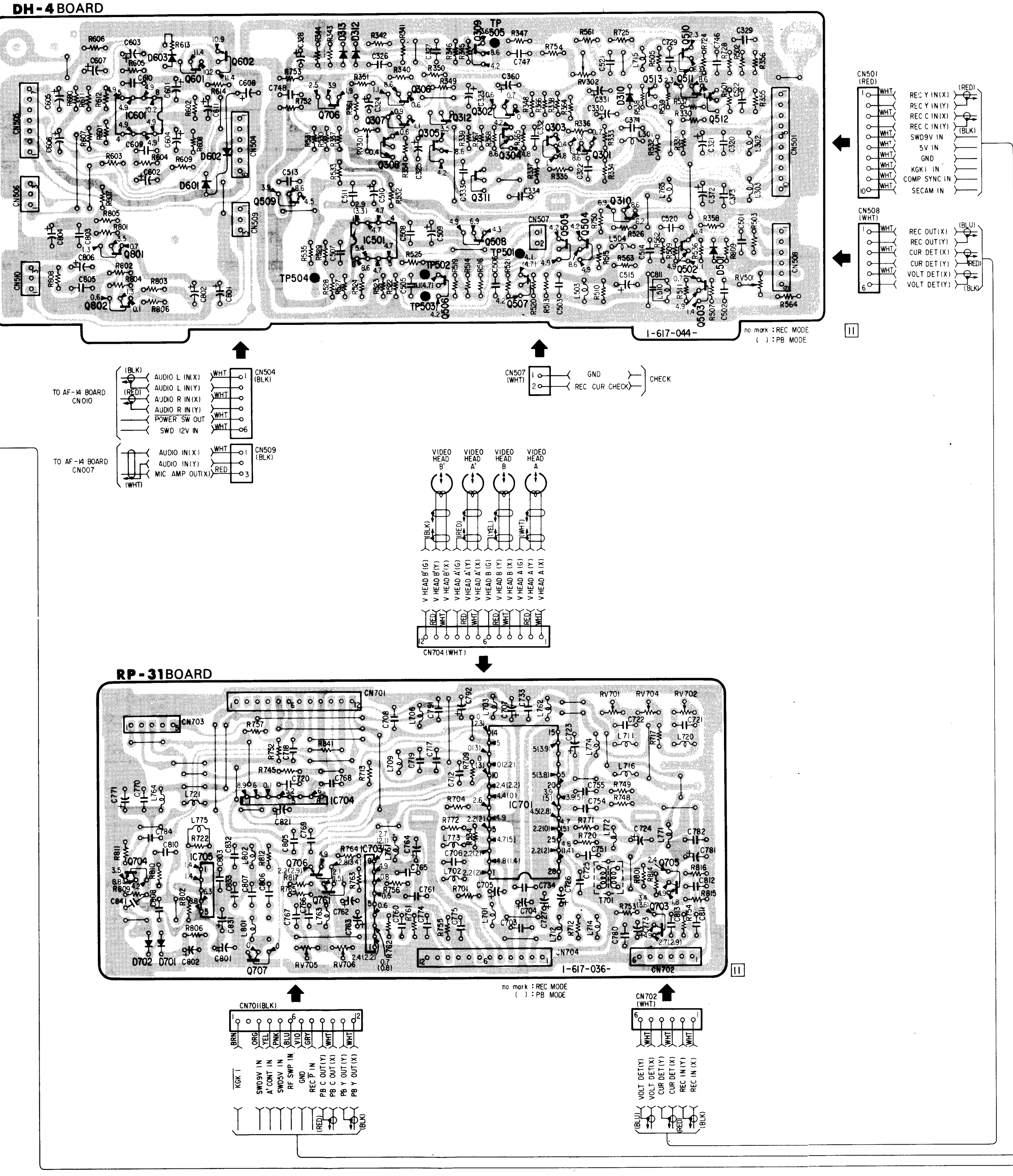
HEAD AMP) PRINTED WIRING BOARDS

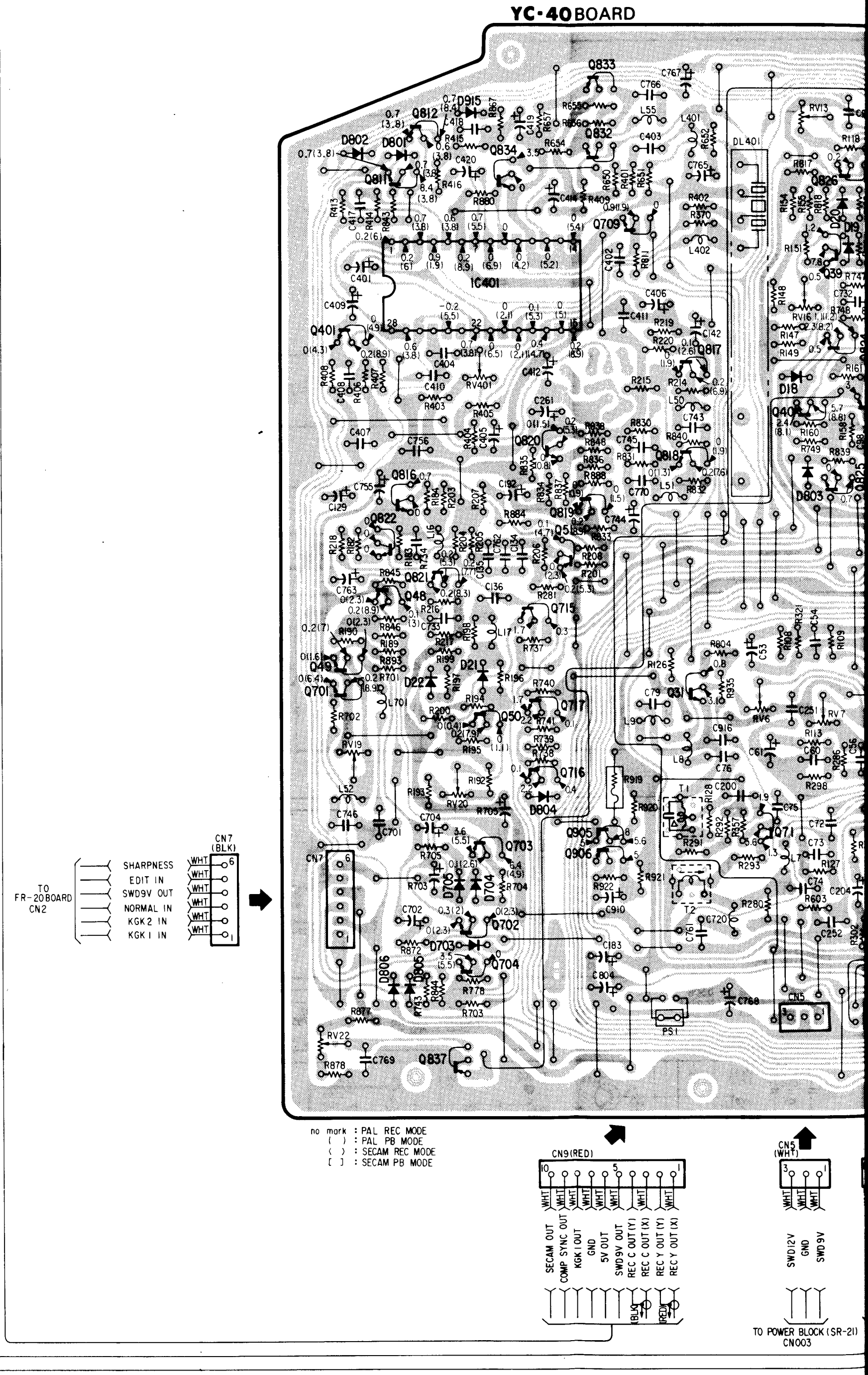
	9	10	11	12
Q·IC	04 906 800 901 IC902	007 IC901 907	501,502 503,504 509 505 IC601 506 610 607,606 608,609 603 605,604 602 601 704 703 702	701
D	901	902	505 605 604,603 702,706,703 601,602 705,704,707	607 609,608 701
ADJ	02	LV901 RV901		
TP	05 903	904 901 001 902		

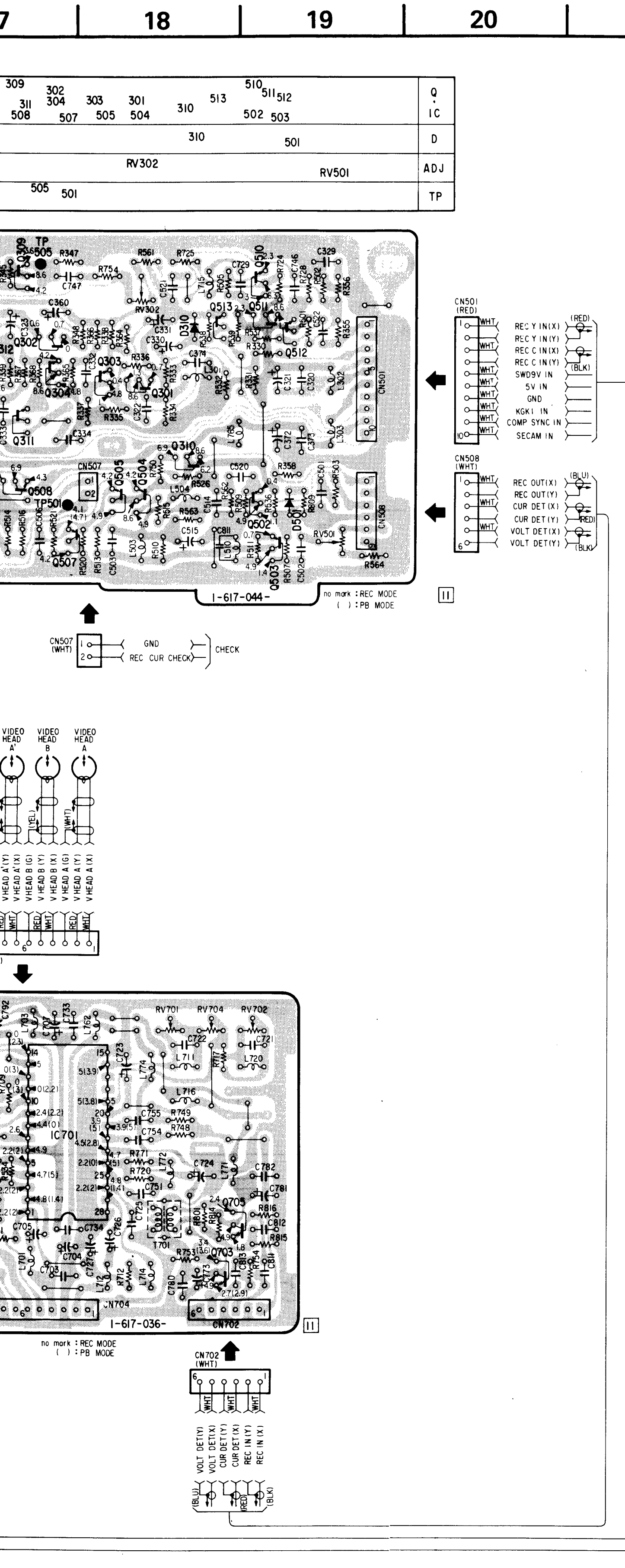
	14	15	16	17	18	19	
Q·IC		IC601 601 602	509 706 308 IC501	306 307 312 305 506 309 311 508 302 304 507	303 505 301 504 310 513	510 511 512 502 503	Q·IC
D		603 601 602	313,312		310	501	D
ADJ			RV301		RV302	RV501	ADJ
TP			504	502 503 505 501			TP

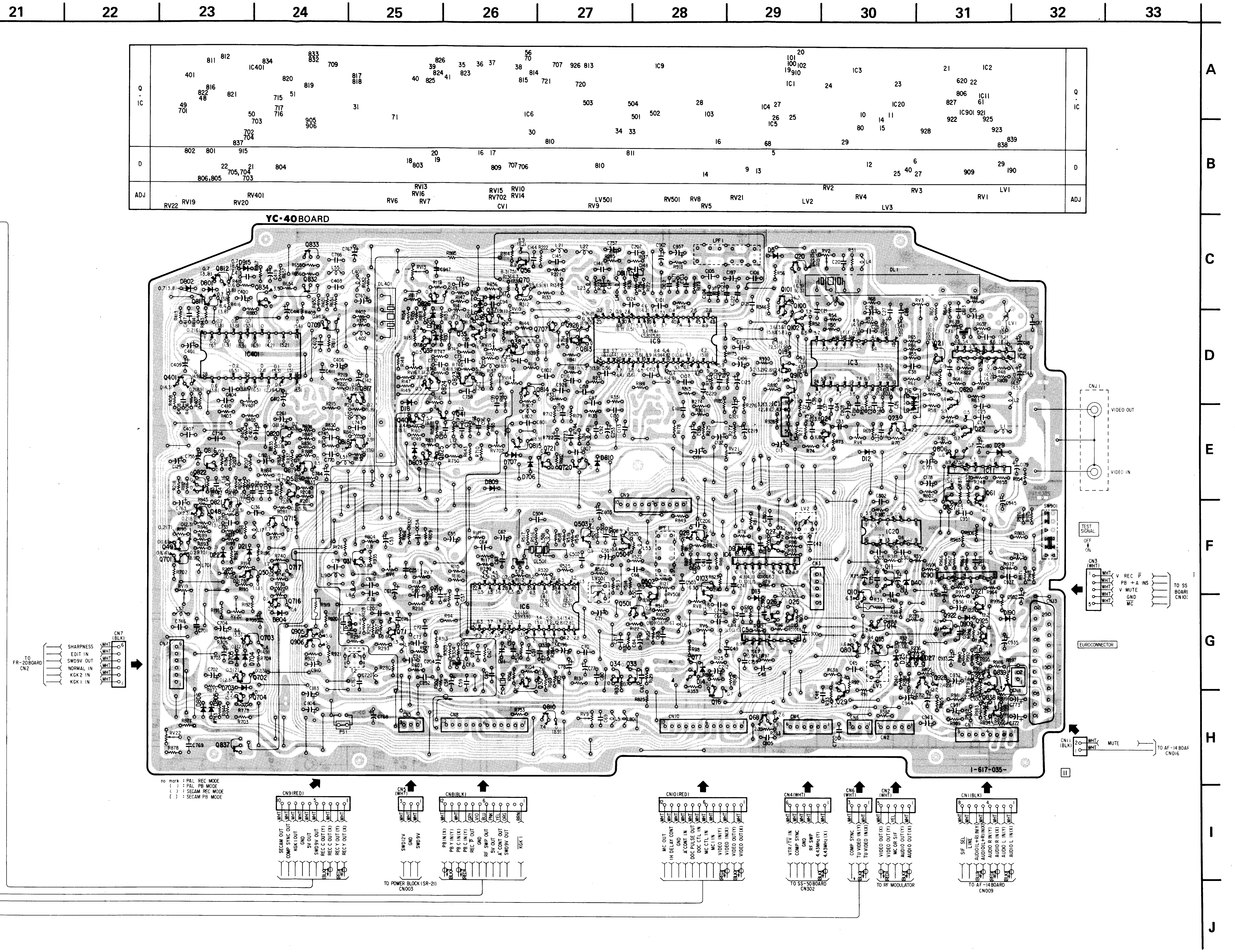
	22	23	24	25
Q·IC		811 812 401 816 822 48 821 49 701 50 702 704 837	834 IC401 833 832 709 820 819 715 51 717 716 703 905 906	817 818 31 71 40 826 39 824 825
D		802 801 915 22 21 705,704 806,805 703	804	18 803 20 19
ADJ		RV22 RV19 RV20	RV401	RV6 RV13 RV16 RV7


TU001
TO RF MODULATOR
1-617-031-
no mark : REC MODE
( ) : PB MODE
CN901 (RED)
AM AUDIO OUT(X)
AM AUDIO OUT(Y)
AM AUDIO IN(X)
AM AUDIO IN(Y)
HIGH CUT
TO AF-14 BOARD CN011
TU VIDEO OUT(X)
TU VIDEO OUT(Y)
COMP SYNC
CN505 (WHT)
TO PW-15 BOARD
AUDIO L IN
AUDIO L OUT
GND
AUDIO R IN
AUDIO R OUT
SWD12V
POWER SW IN
CN506 (RED)
TO HP-18 BOARD
HP R OUT
GND
HP L OUT
CN510 (WHT)
TO MC-10 BOARD
MIC IN (X)
MIC IN (Y)
AUDIO OUT
CN501 (WHT)
VOW
VOB
QOD
GND (D)
TO SS-50 BOARD CN114
CN503 (RED)
VIDEO IN(X)
VIDEO IN(Y)
VIDEO OUT(X)
VIDEO OUT(Y)
MC 1 OUT
MC CTL OUT
DOC CTL OUT
DOC PULSE IN
A' CONT IN
GND
1H DELAY CONT
MC IN
CN502 (BLK)
DOC CONT2 IN
DOC CONT1 IN
JOG CONT2 IN
JOG CONT1 IN
DOC CONT 1'
POWER FAIL
TMR 5V
RF SWP IN
TO SS-50 BOARD CN111
CN902 (WHT)
F ERASE H(X)
F ERASE H(Y)
F ERASE H(G)
A ERASE H(X)
A ERASE H(Y)
AUDIO HEAD(X)
AUDIO HEAD(Y)
AUDIO HEAD(G)
FULL ERASE HEAD
AUDIO ERASE HEAD
AUDIO HEAD


DH-4 BOARD
1-617-044-
no mark : REC MODE
( ) : PB MODE
CN504 (BLK)
TO AF-14 BOARD CN010
AUDIO L IN(X)
AUDIO L IN(Y)
AUDIO R IN(X)
AUDIO R IN(Y)
POWER SW OUT
SWD 12V IN
CN509 (BLK)
TO AF-14 BOARD CN007
AUDIO IN(X)
AUDIO IN(Y)
MIC AMP OUT(X)
CN507 (WHT)
GND
REC CUR CHECK
CHECK
CN501 (RED)
REC Y IN(X)
REC Y IN(Y)
REC C IN(X)
REC C IN(Y)
SWD9V IN
5V IN
GND
KGK1 IN
COMP SYNC IN
SECAM IN
CN508 (WHT)
REC OUT(X)
REC OUT(Y)
CUR DET(X)
CUR DET(Y)
VOLT DET(X)
VOLT DET(Y)
VIDEO HEAD B'
VIDEO HEAD A'
VIDEO HEAD B
VIDEO HEAD A
V HEAD B'(G)
V HEAD B'(Y)
V HEAD B'(X)
V HEAD A'(G)
V HEAD A'(Y)
V HEAD A'(X)
V HEAD B (G)
V HEAD B (Y)
V HEAD B (X)
V HEAD A (G)
V HEAD A (Y)
V HEAD A (X)
CN704 (WHT)
RP-31 BOARD
1-617-036-
no mark : REC MODE
( ) : PB MODE
CN701 (BLK)
KGK 1
SWD9V IN
A' CONT IN
SWD5V IN
RF SWP IN
GND
REC P IN
PB C OUT(Y)
PB C OUT(X)
PB Y OUT(Y)
PB Y OUT(X)
CN702 (WHT)
VOLT DET(Y)
VOLT DET(X)
CUR DET(Y)
CUR DET(X)
REC IN(Y)
REC IN(X)


YC-40 BOARD
CN7 (BLK)
TO FR-20 BOARD CN2
SHARPNESS
EDIT IN
SWD9V OUT
NORMAL IN
KGK2 IN
KGK1 IN
no mark : PAL REC MODE
( ) : PAL PB MODE
〈 〉 : SECAM REC MODE
[ ] : SECAM PB MODE
CN9 (RED)
SECAM OUT
COMP SYNC OUT
KGK1 OUT
GND
5V OUT
SWD9V OUT
REC C OUT (Y)
REC C OUT (X)
REC Y OUT (Y)
REC Y OUT (X)
CN5 (WHT)
SWD12V
GND
SWD9V
TO POWER BLOCK (SR-21) CN003


17
18
19
20
Q
IC
D
ADJ
TP
RV302
RV501
CN501 (RED)
REC Y IN(X)
REC Y IN(Y)
REC C IN(X)
REC C IN(Y)
SWD9V IN
5V IN
GND
KGK1 IN
COMP SYNC IN
SECAM IN
CN508 (WHT)
REC OUT(X)
REC OUT(Y)
CUR DET(X)
CUR DET(Y)
VOLT DET(X)
VOLT DET(Y)
(RED)
(BLK)
(BLU)
1-617-044-
no mark : REC MODE
( ) : PB MODE
CN507 (WHT)
GND
REC CUR CHECK
CHECK
VIDEO HEAD
1-617-036-
CN704
CN702 (WHT)
VOLT DET(Y)
VOLT DET(X)
CUR DET(Y)
CUR DET(X)
REC IN(Y)
REC IN(X)
no mark : REC MODE
( ) : PB MODE
II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A
B
C
D
E
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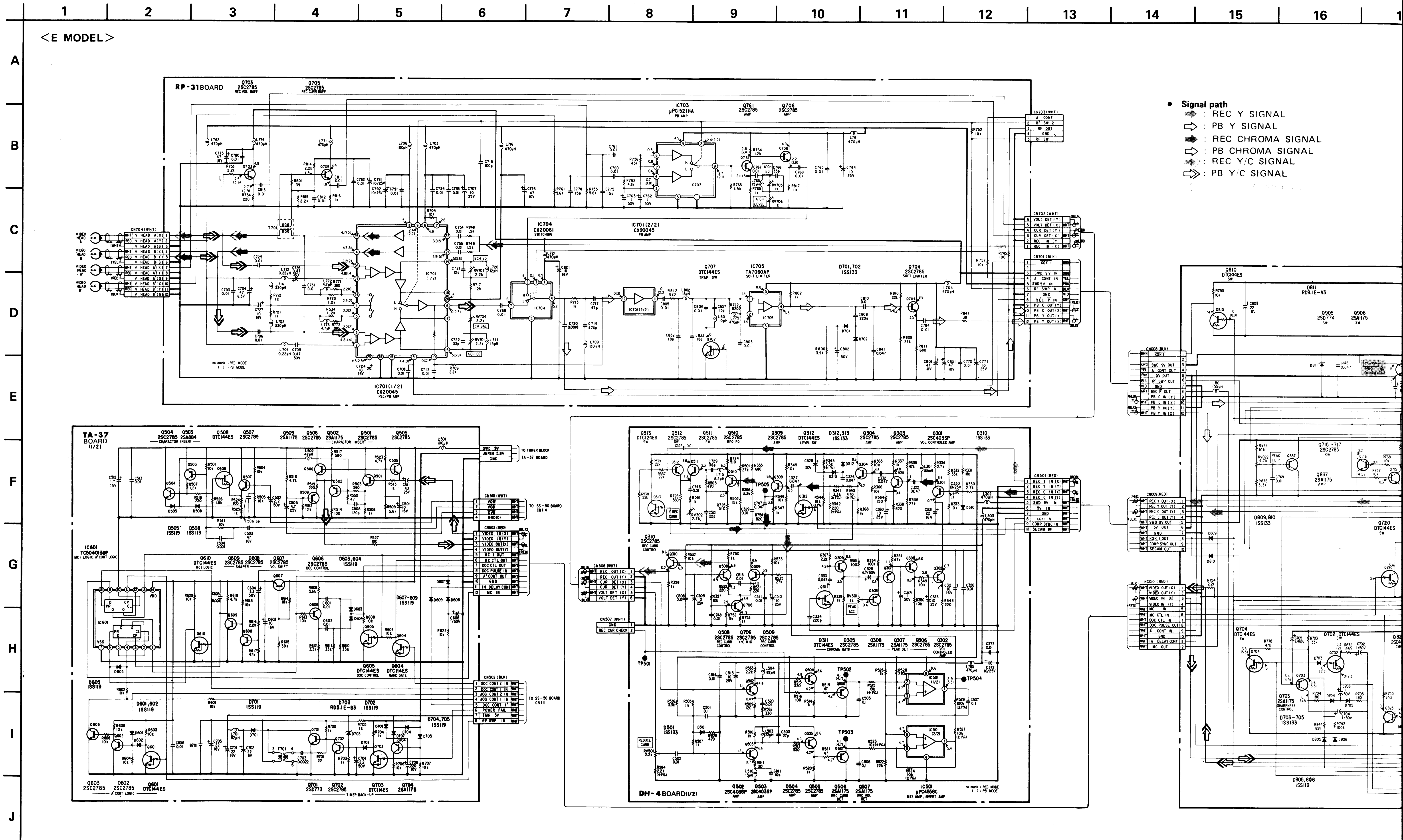
G
H
I
J
Q
IC
D
ADJ
YC-40 BOARD
TO FR-20BOARD CN2
CN7 (BLK)
SHARPNESS
EDIT IN
SWD9V OUT
NORMAL IN
KGK2 IN
KGK1 IN
no mark : PAL REC MODE
( ) : PAL PB MODE
〈 〉 : SECAM REC MODE
[ ] : SECAM PB MODE
CNJ1
VIDEO OUT
VIDEO IN
SW901
TEST SIGNAL
OFF
ON
CN3 (WHT)
V REC P
PB +A INS
V MUTE
GND
MC
TO SS BOARD CN103
EUROCONNECTOR
CN11 (BLK)
MUTE
TO AF-14 BOARD CN016
1-617-035-
II
CN9(RED)
SECAM OUT
COMP SYNC OUT
KGK1 OUT
GND
5V OUT
SWD9V OUT
REC C OUT(Y)
REC C OUT(X)
REC Y OUT(Y)
REC Y OUT(X)
CN5 (WHT)
SWD12V
GND
SWD9V
TO POWER BLOCK (SR-21) CN003
CN8(BLK)
PB IN(X)
PB Y IN(Y)
PB C IN(X)
PB C IN(Y)
REC P OUT
GND
RF SWP OUT
5V OUT
A' CONT OUT
SWD9V OUT
KGK1
CN10(RED)
MC OUT
1H DELAY CONT
GND
A'CONT IN
DOC PULSE OUT
DOC CTL IN
MC CTL IN
MC1 IN
VIDEO IN(Y)
VIDEO IN(X)
VIDEO OUT(Y)
VIDEO OUT(X)
CN4(WHT)
VTR/TV IN
COMP SYNC
GND
RF SWP
4.43MHz(Y)
4.43MHz(X)
TO SS-50BOARD CN302
CN6 (WHT)
COMP SYNC
TU VIDEO IN(Y)
TU VIDEO IN(X)
CN2 (WHT)
VIDEO OUT(X)
VIDEO OUT(Y)
MC OR SIF
AUDIO OUT(Y)
AUDIO OUT(X)
TO RF MODULATOR
CN1(BLK)
SIF SEL
LINE
AUDIO(L+R)IN(Y)
AUDIO(L+R)IN(X)
AUDIO R IN(Y)
AUDIO R IN(X)
AUDIO L IN(Y)
AUDIO L IN(X)
TO AF-14 BOARD CN009
WHT
YEL
RED
BLK
BLU

MC-Service

4-3. E MODEL; YC-40 (Y/CHROMA SIGNAL PROCESS), RP-31 (VIDEO SIGNAL REC/PB AMP), TA-37 (TUNER, AUDIO), DH-4 (A/V HEAD AMP) SCHEMATIC DIAGRAMS

– Ref. No. YC-40 BOARD: 1,000 series, RP-31 BOARD: 6,000 series, TA-37 BOARD: 5,000 series, DH-4 BOARD: 7,000 series –



<E MODEL>
RP-31BOARD
CN704 (WHT)
VIDEO HEAD A
VIDEO HEAD B
VIDEO HEAD A'
VIDEO HEAD B'
IC703 μPC1521HA PB AMP
Q761 2SC2785 AMP
Q706 2SC2785 AMP
IC704 CX20061 SWITCHING
IC701 (2/2) CX20045 PB AMP
IC701 (1/2) CX20045 REC/PB AMP
IC705 TA7060AP SOFT LIMITER
Q707 DTC144ES TRAP SW
D701, 702 1SS133
Q704 2SC2785 SOFT LIMITER
CN703 (WHT)
CN702 (WHT)
CN701 (BLK)
no mark : REC MODE
( ) : PB MODE
TA-37 BOARD (1/2)
IC601 TC5040130P MC1 LOGIC, A' CONT LOGIC
CN501 (WHT)
CN503 (RED)
CN502 (BLK)
TO TUNER BLOCK TA-37 BOARD
TO SS-50 BOARD CN114
TO SS-50 BOARD CN111
DH-4 BOARD(1/2)
CN508 (WHT)
CN507 (WHT)
CN501 (RED)
IC501 μPC4558C MIX AMP, INVERT AMP
TP501
TP502
TP503
TP504
TP505
CN008 (BLK)
CN009 (RED)
NC010 (RED)
1
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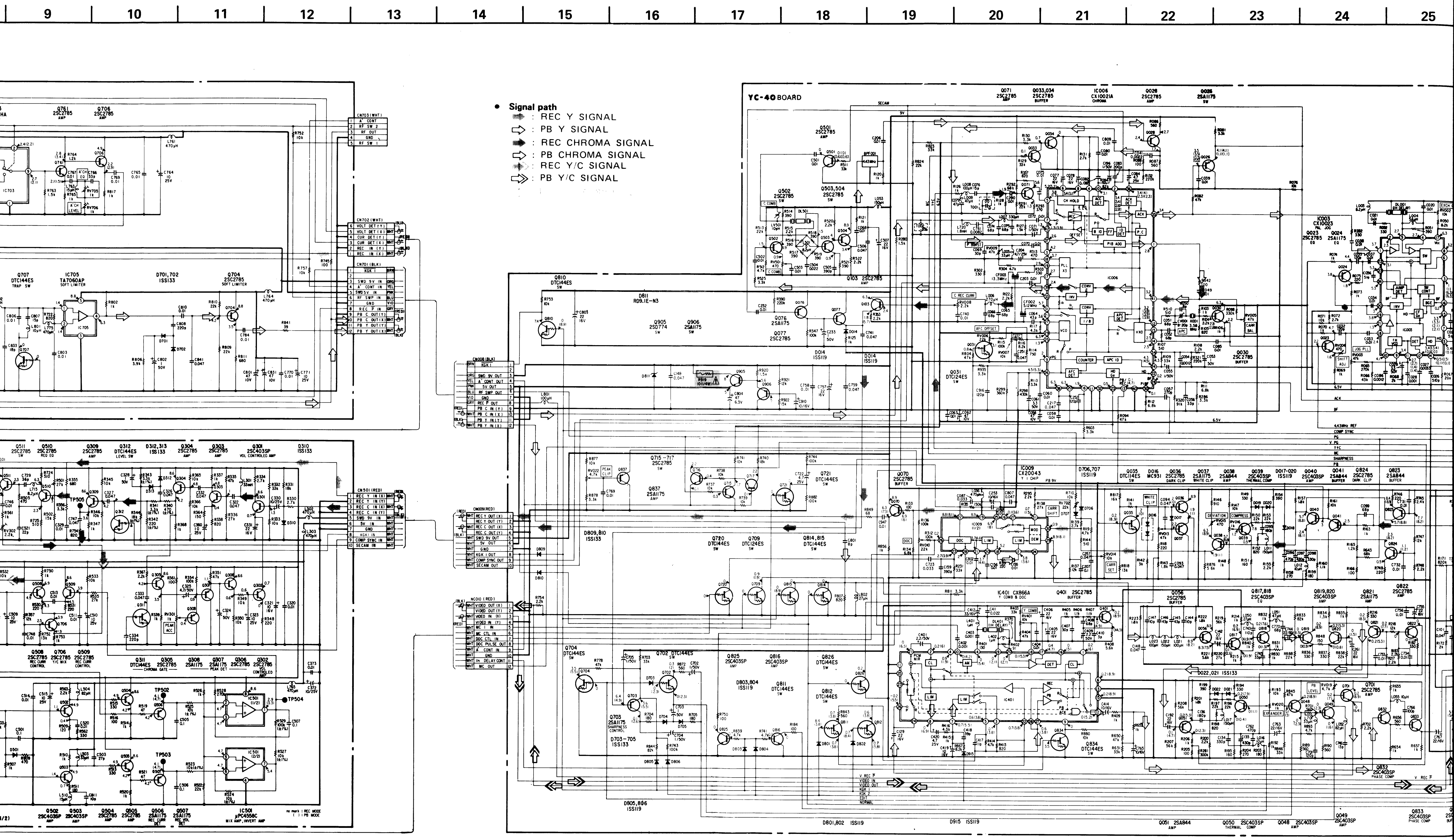
- **Signal path**
  - ➡ : REC Y SIGNAL
  - ⇨ : PB Y SIGNAL
  - ➡ : REC CHROMA SIGNAL
  - ⇨ : PB CHROMA SIGNAL
  - ➡ : REC Y/C SIGNAL
  - ⇨ : PB Y/C SIGNAL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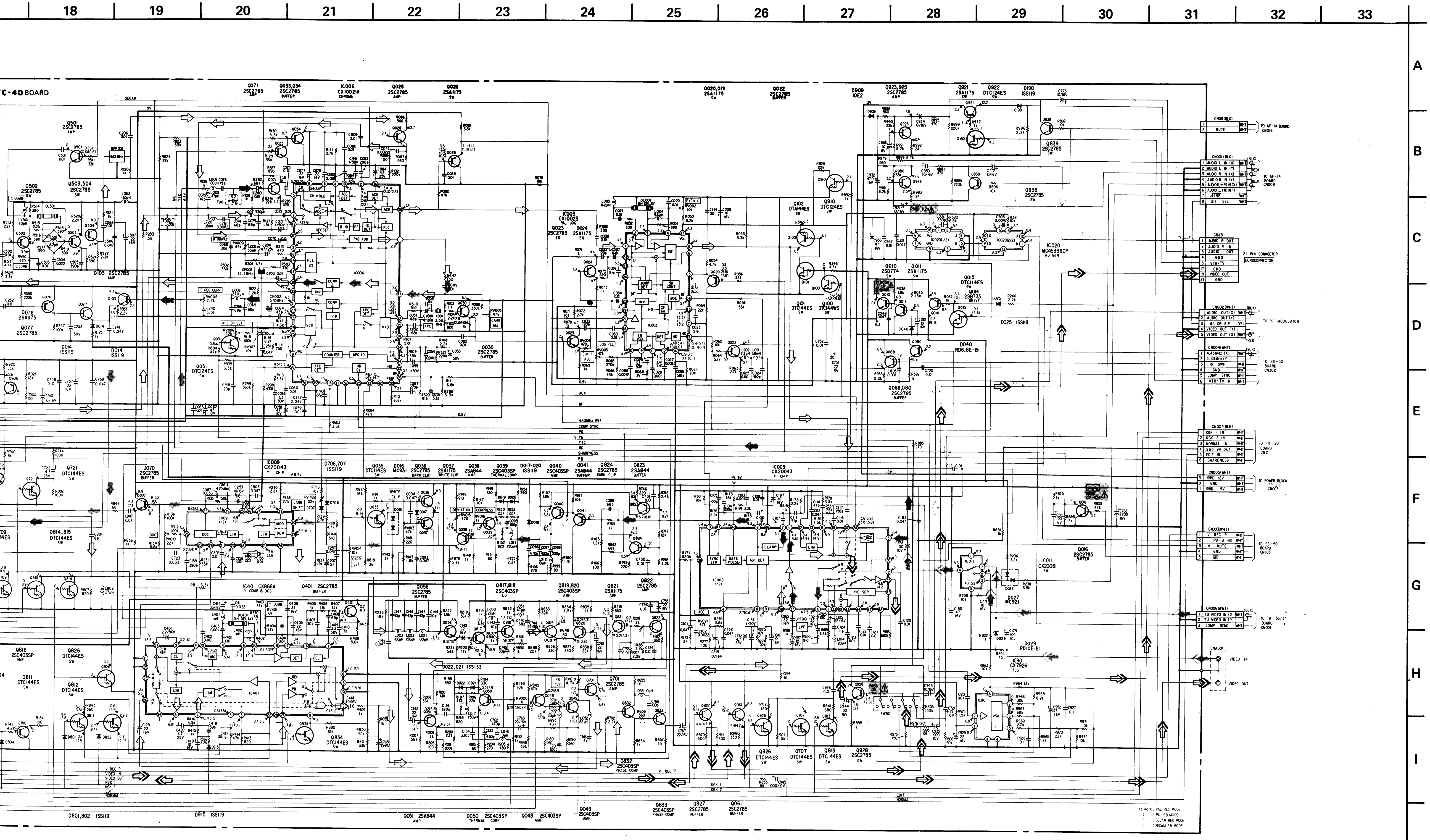
Signal path
: REC Y SIGNAL
: PB Y SIGNAL
: REC CHROMA SIGNAL
: PB CHROMA SIGNAL
: REC Y/C SIGNAL
: PB Y/C SIGNAL
YC-40 BOARD
CN703 (WHT)
CN702 (WHT)
CN701 (BLK)
CN501 (RED)
CN008 (BLK)
CN009 (RED)
CN010 (RED)
IC705 TA7060AP SOFT LIMITER
IC501 μPC4558C MIX AMP, INVERT AMP
IC006 CX10021A CHROMA
IC009 CX20043 Y 1 CHIP
IC401 CX866A Y COMB B DOC
IC003 CX10023 PAL JOG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A
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F
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H
I
J
TC-40 BOARD
IC006 CX10021A CHROMA
IC003 CX10023 PAL JOG
IC009 CX20043 Y I CHIP
IC401 CX866A Y COMB & DOC
IC020 MC4538BCP HD GEN
IC011 CX20061 SW
IC901 CX7926 TSG
CN001(BLK) TO AF-14 BOARD CN016
CN001(BLK) TO AF-14 BOARD CN009
CNJ3 21 PIN CONNECTOR EUROCONNECTOR
CN002(WHT) TO RF MODULATOR
CN004(WHT) TO SS-50 BOARD CN302
CN007(BLK) TO FR-20 BOARD CN2
CN003(WHT) TO POWER BLOCK (SR-21) CN003
CN005(WHT) TO SS-50 BOARD CN103
CN006(WHT) TO TA-36/37 BOARD CN001
CNJ001 VIDEO IN VIDEO OUT

MC-Service

E MODEL; YC-40 (Y/CHROMA SIGNAL PROCESS), RP-31 (VIDEO SIGNAL REC/PB AMP), TA-37 (TUNER, AUDIO), DH-4 (A/V HEAD AMP) PRINTED WIRING BOARDS

– Ref. No. YC-40 BOARD: 1,000 series, RP-31 BOARD: 6,000 series, TA-37 BOARD: 5,000 series, DH-4 BOARD: 7,000 series –

Note on Schematic Diagram:

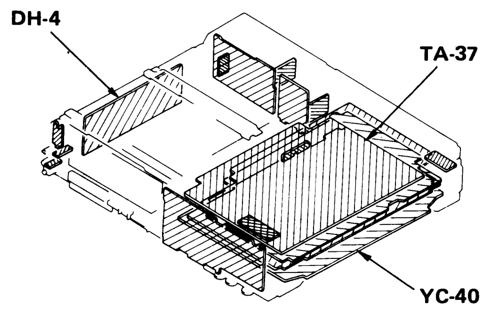
- All resistors are in ohms, 1/6 W unless otherwise noted. kΩ: 1000 Ω, MΩ: 1000 kΩ
- All capacitors are in μF unless otherwise noted. p: μμF 50WV or less are not indicated except for electrolytics.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : nonflammable resistor.
- : fusible resistor.
- The red lines show the main voltages.
- All voltages are dc measured with a VOM (10 MΩ).
- ▬▬ : B+ bus.
- ‧ ▬ ▬ ▬ : B– bus.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

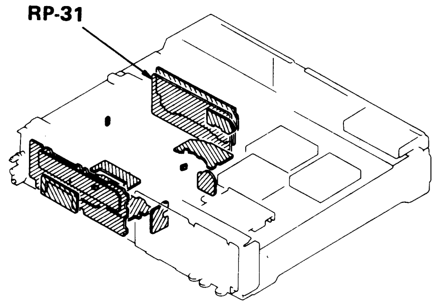
Note on Printed Wiring Board:

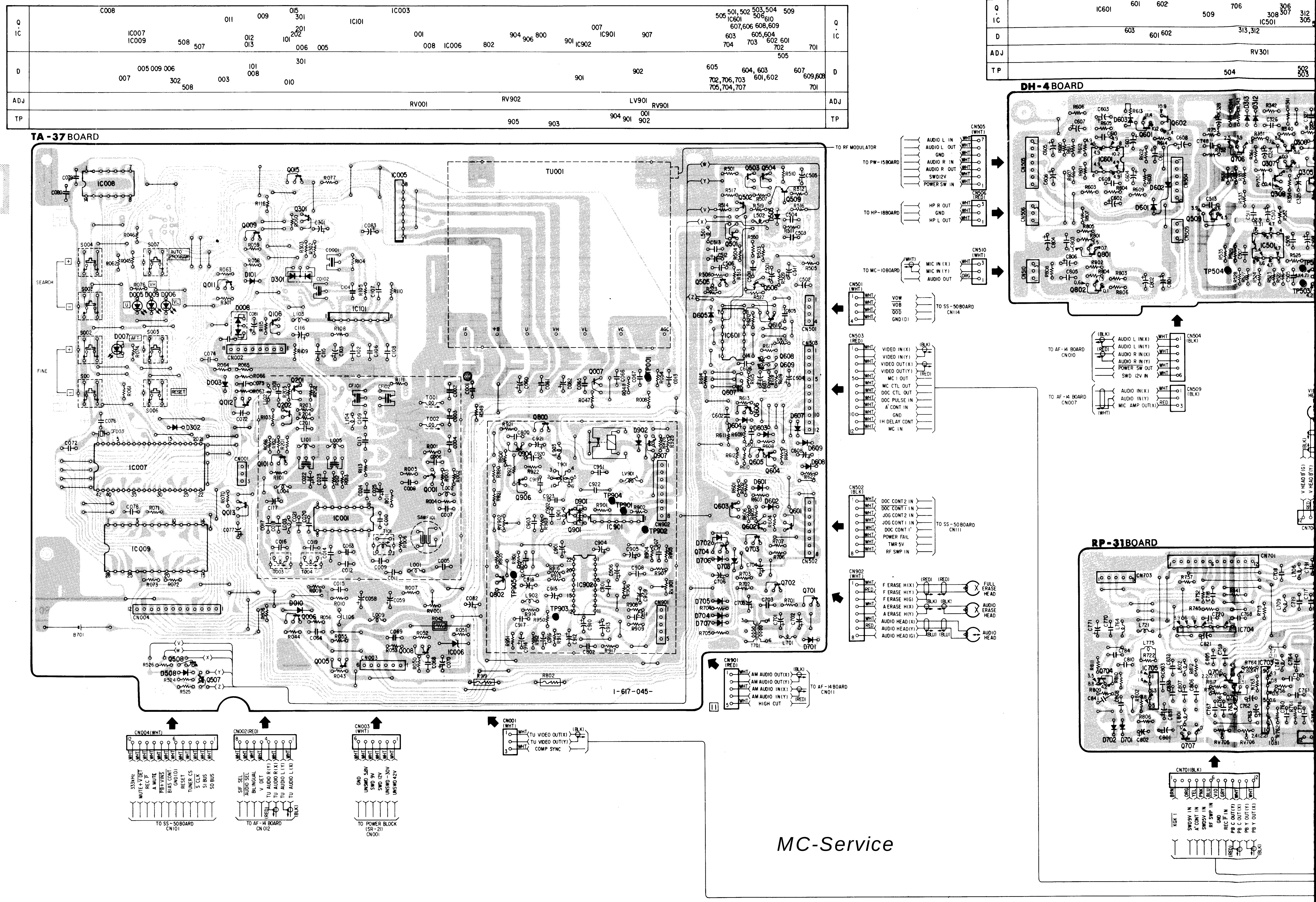
- ○—— : Indicates a leadwire mounted on the component side.
- ●—— : Indicates a leadwire mounted on the printed side.
- ░ : soldering side.
- ░ : B+ pattern
- Digital transistor (YC-40: Q15, 31, 35, 100, 101, 102, 702, 704, 707, 709, 720, 721, 810, 811, 812, 813, 814, 815, 826, 834, 910, 922, 926. RP-31: Q707. DH-4: Q311, 312. TA-36: Q003, 004, 006, 013, 014, 015, 301, 508, 601, 604, 605, 610, 703, 800, 802, 901) transistors with resistors.
  Refer to the YC-40, RP-31, DH-4, TA-36 boards schematic diagram for digital transistor.

When indicating parts by reference number, please include the board name.

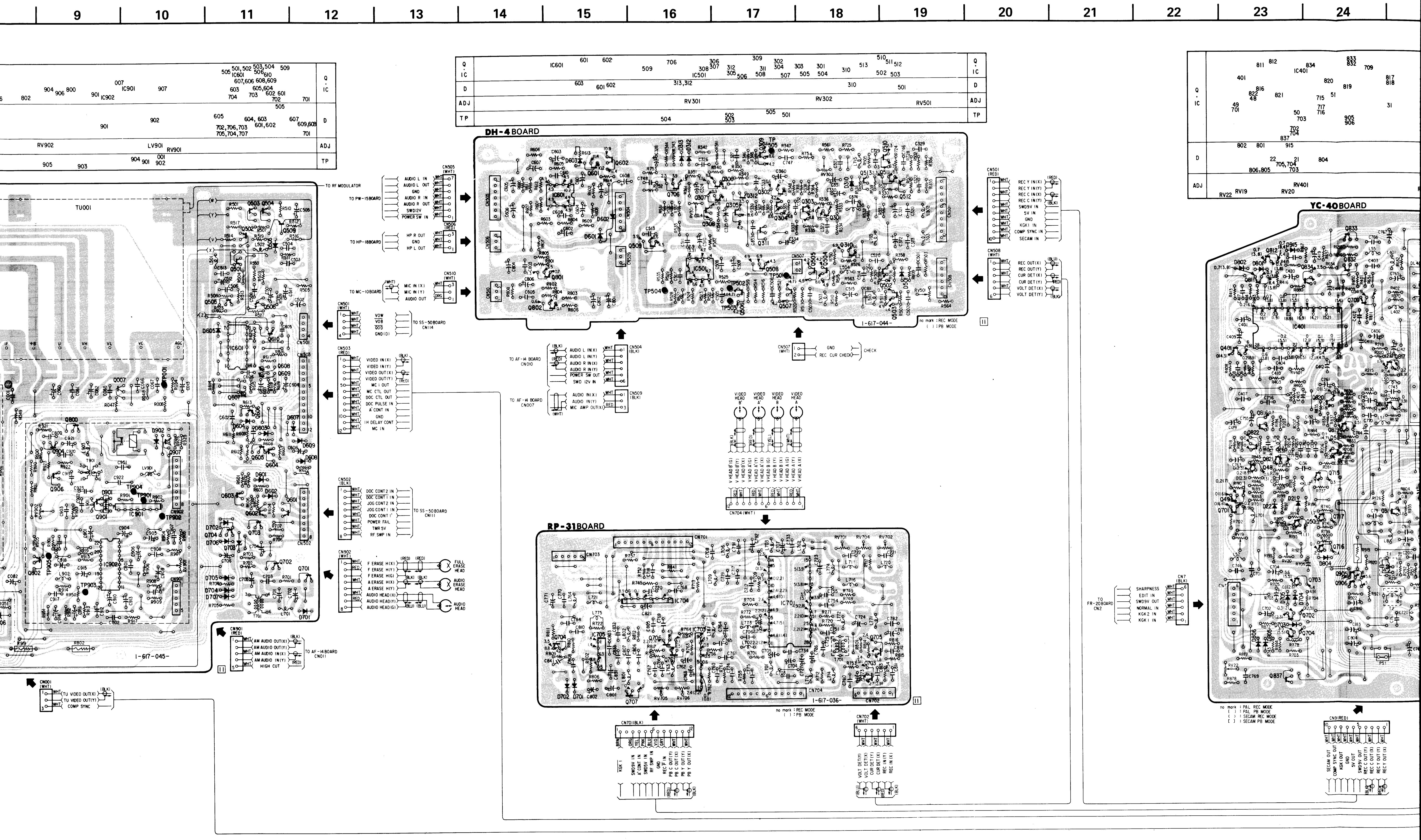


DH-4
TA-37
YC-40





Q
IC
D
ADJ
TP
TA-37 BOARD
DH-4 BOARD
RP-31BOARD
TU001
IC008
IC007
IC009
IC001
IC101
IC005
IC601
IC901
IC902
IC006
1-617-045-
TO RF MODULATOR
TO PW-15BOARD
TO HP-18BOARD
TO MC-10BOARD
TO SS-50BOARD CN114
TO SS-50BOARD CN111
TO AF-14 BOARD CN010
TO AF-14 BOARD CN007
TO AF-14BOARD CN011
TO SS-50BOARD CN101
TO AF-14 BOARD CN012
TO POWER BLOCK (SR-211 CN001
FULL ERASE HEAD
AUDIO ERASE HEAD
AUDIO HEAD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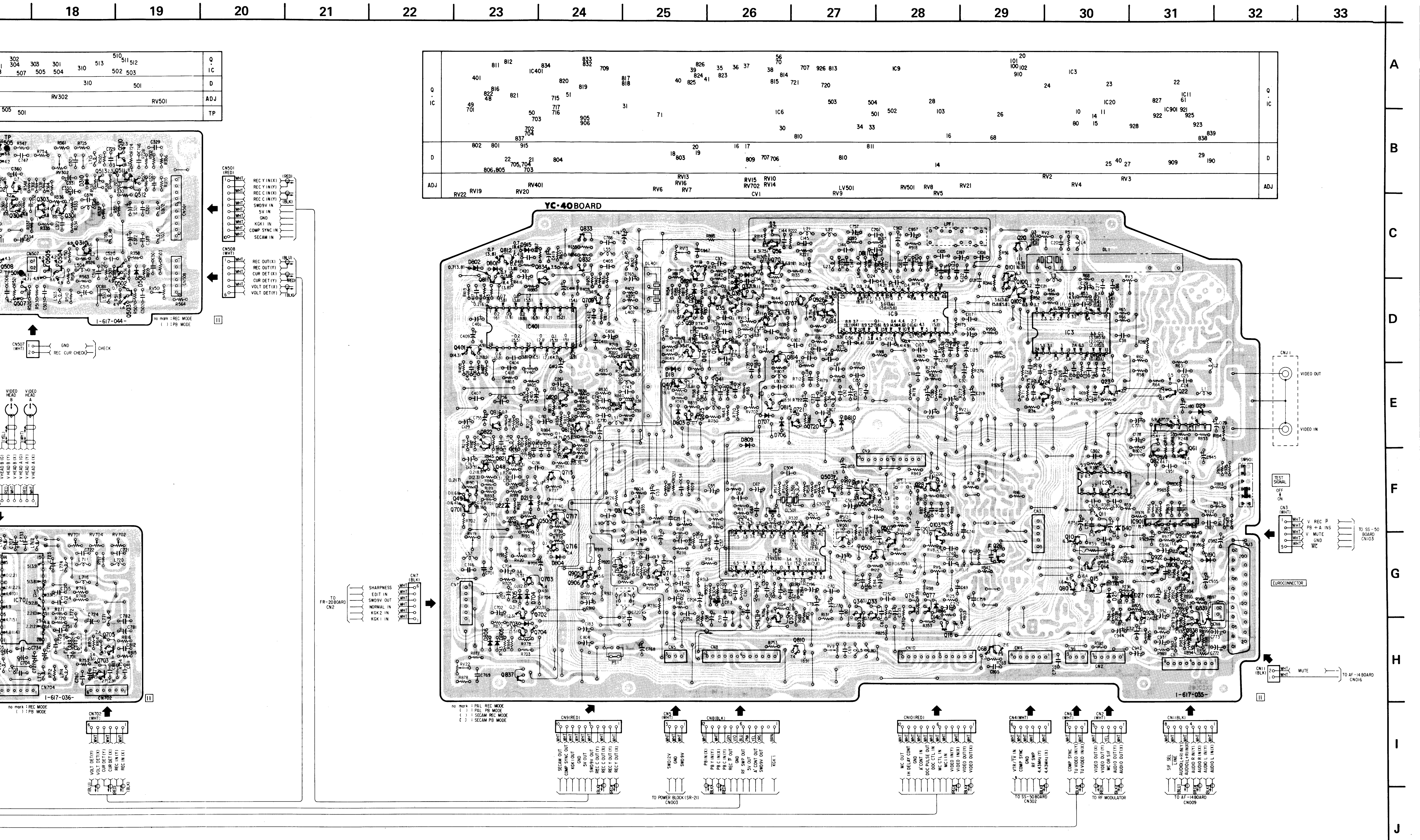
22
23
24
TU001
TO RF MODULATOR
1-617-045-
DH-4 BOARD
1-617-044-
no mark : REC MODE
( ) : PB MODE
RP-31 BOARD
1-617-036-
no mark : REC MODE
( ) : PB MODE
YC-40 BOARD
no mark : PAL REC MODE
( ) : PAL PB MODE
( ) : SECAM REC MODE
[ ] : SECAM PB MODE
CN505 (WHT)
AUDIO L IN
AUDIO L OUT
GND
AUDIO R IN
AUDIO R OUT
SWD12V
POWER SW IN
TO PW-15BOARD
CN506 (RED)
HP R OUT
GND
HP L OUT
TO HP-18BOARD
CN510 (WHT)
MIC IN (X)
MIC IN (Y)
AUDIO OUT
TO MC-10BOARD
CN501 (WHT)
VOW
VOB
QOD
GND (D)
TO SS-50BOARD CN114
CN503 (RED)
VIDEO IN (X)
VIDEO IN (Y)
VIDEO OUT (X)
VIDEO OUT (Y)
MC I OUT
MC CTL OUT
DOC CTL OUT
DOC PULSE IN
A' CONT IN
GND
1H DELAY CONT
MC IN
CN502 (BLK)
DOC CONT 2 IN
DOC CONT 1 IN
JOG CONT 2 IN
JOG CONT 1 IN
DOC CONT 1'
POWER FAIL
TMR 5V
RF SWP IN
TO SS-50BOARD CN111
CN902 (WHT)
F ERASE H (X)
F ERASE H (Y)
F ERASE H (G)
A ERASE H (X)
A ERASE H (Y)
AUDIO HEAD (X)
AUDIO HEAD (Y)
AUDIO HEAD (G)
FULL ERASE HEAD
AUDIO ERASE HEAD
AUDIO HEAD
CN901 (RED)
AM AUDIO OUT (X)
AM AUDIO OUT (Y)
AM AUDIO IN (X)
AM AUDIO IN (Y)
HIGH CUT
TO AF-14BOARD CN011
CN001 (WHT)
TU VIDEO OUT (X)
TU VIDEO OUT (Y)
COMP SYNC
CN504 (BLK)
AUDIO L IN (X)
AUDIO L IN (Y)
AUDIO R IN (X)
AUDIO R IN (Y)
POWER SW OUT
SWD 12V IN
TO AF-14 BOARD CN010
CN509 (BLK)
AUDIO IN (X)
AUDIO IN (Y)
MIC AMP OUT (X)
TO AF-14 BOARD CN007
CN507 (WHT)
GND
REC CUR CHECK
CHECK
VIDEO HEAD B'
VIDEO HEAD A'
VIDEO HEAD B
VIDEO HEAD A
V HEAD B' (G)
V HEAD B' (Y)
V HEAD B' (X)
V HEAD A' (G)
V HEAD A' (Y)
V HEAD A' (X)
V HEAD B (G)
V HEAD B (Y)
V HEAD B (X)
V HEAD A (G)
V HEAD A (Y)
V HEAD A (X)
CN704 (WHT)
CN501 (RED)
REC Y IN (X)
REC Y IN (Y)
REC C IN (X)
REC C IN (Y)
SWD9V IN
5V IN
GND
KGK1 IN
COMP SYNC IN
SECAM IN
CN508 (WHT)
REC OUT (X)
REC OUT (Y)
CUR DET (X)
CUR DET (Y)
VOLT DET (X)
VOLT DET (Y)
CN701 (BLK)
KGK 1
SWD9V IN
A' CONT IN
SWD5V IN
RF SWP IN
GND
REC P IN
PB C OUT (Y)
PB C OUT (X)
PB Y OUT (Y)
PB Y OUT (X)
CN702 (WHT)
VOLT DET (Y)
VOLT DET (X)
CUR DET (Y)
CUR DET (X)
REC IN (Y)
REC IN (X)
CN7 (BLK)
SHARPNESS
EDIT IN
SWD9V OUT
NORMAL IN
KGK2 IN
KGK1 IN
TO FR-20BOARD CN2
CN9 (RED)
SECAM OUT
COMP SYNC OUT
KGK1 OUT
GND
5V OUT
SWD9V OUT
REC C OUT (Y)
REC C OUT (X)
REC Y OUT (Y)
REC Y OUT (X)
11

		9	10	11	12	
6	802	904, 906, 800, 901, IC902, 007	IC901, 907	505, 501, 502, IC601, 503, 504, 506, 610, 509, 607, 606, 608, 609, 603, 605, 604, 602, 601, 704, 703, 702	701	Q · IC
		901	902	505, 605, 604, 603, 702, 706, 703, 705, 704, 707, 601, 602	607, 609, 608, 701	D
		RV902	LV901, RV901			ADJ
		905, 903	904, 901, 001, 902			TP

	14	15	16	17	18	19	
Q · IC		IC601, 601, 602	509, 706, 308, IC501	306, 307, 312, 305, 506, 309, 311, 508, 302, 304, 507	303, 505, 301, 504, 310, 513	510, 511, 512, 502, 503	Q · IC
D		603, 601, 602	313, 312		310	501	D
ADJ			RV301		RV302	RV501	ADJ
TP			504	502, 503, 505, 501			TP

	23	24	
Q · IC	811, 812, IC401, 401, 816, 822, 48, 821, 49, 701, 50, 703, 702, 704, 837	834, 833, 832, 709, 820, 819, 715, 51, 717, 716, 905, 906	817, 818, 31
D	802, 801, 915, 22, 21, 705, 704, 806, 805, 703	804	
ADJ	RV22, RV19, RV401, RV20		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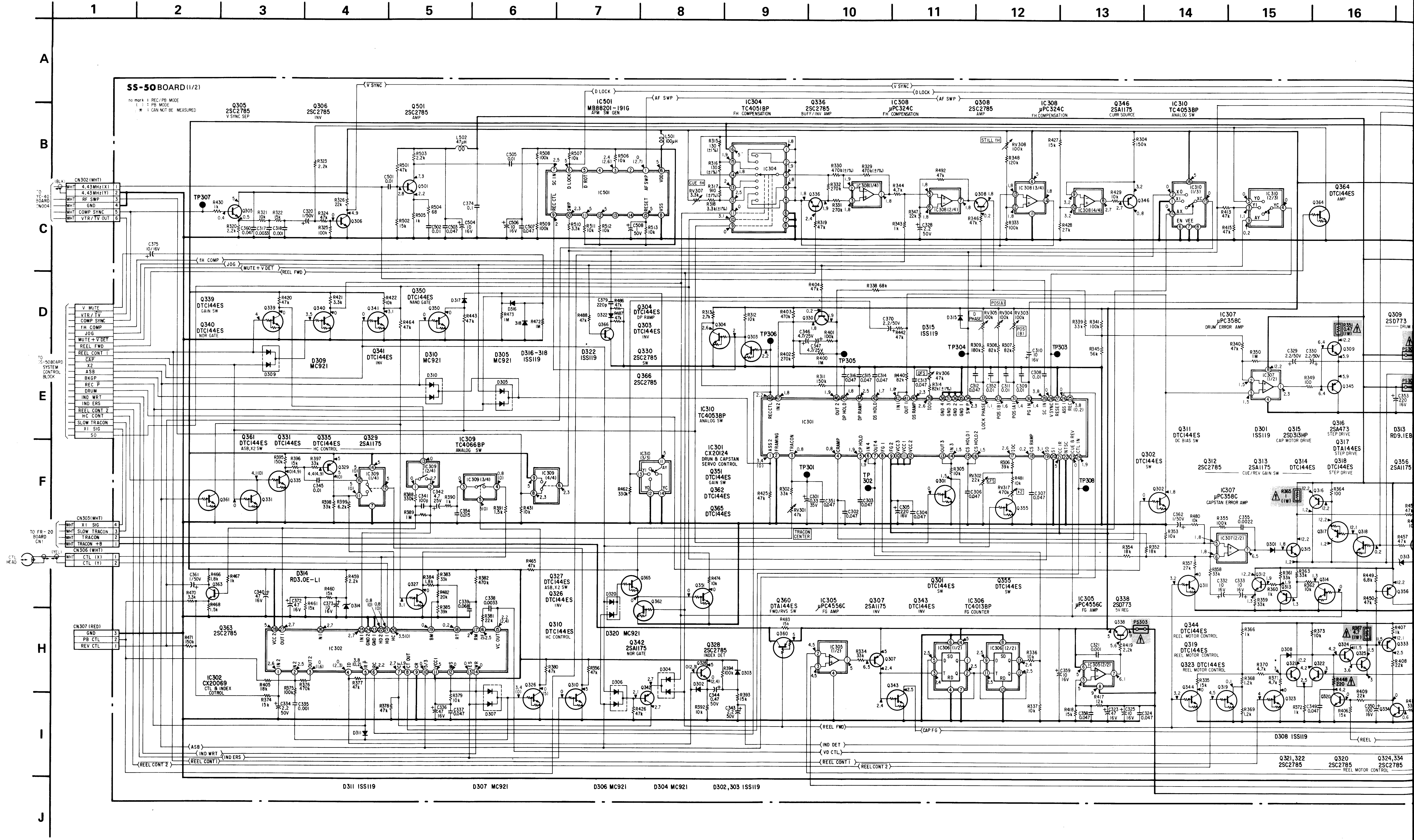
J
Q·IC
D
ADJ
TP
RV302
RV501
YC-40 BOARD
1-617-044-
1-617-036-
1-617-035-
no mark : REC MODE
( ) : PB MODE
no mark : PAL REC MODE
( ) : PAL PB MODE
( ) : SECAM REC MODE
[ ] : SECAM PB MODE
CN501 (RED)
REC Y IN(X)
REC Y IN(Y)
REC C IN(X)
REC C IN(Y)
SWD9V IN
5V IN
GND
KGK1 IN
COMP SYNC IN
SECAM IN
CN508 (WHT)
REC OUT(X)
REC OUT(Y)
CUR DET(X)
CUR DET(Y)
VOLT DET(X)
VOLT DET(Y)
CN507 (WHT)
GND
REC CUR CHECK
CHECK
VIDEO HEAD B
VIDEO HEAD A
CN702 (WHT)
VOLT DET(Y)
VOLT DET(X)
CUR DET(Y)
CUR DET(X)
REC IN(Y)
REC IN(X)
CN7 (BLK)
SHARPNESS
EDIT IN
SWD9V OUT
NORMAL IN
KGK2 IN
KGK1 IN
TO FR-20 BOARD CN2
CN9(RED)
SECAM OUT
COMP SYNC OUT
KGK1 OUT
GND
5V OUT
SWD9V OUT
REC C OUT(Y)
REC C OUT(X)
REC Y OUT(Y)
REC Y OUT(X)
CN5 (WHT)
SWD12V
GND
SW9V
TO POWER BLOCK (SR-21) CN003
CN8(BLK)
PB IN(X)
PB IN(Y)
PB C IN(X)
PB C IN(Y)
REC P OUT
GND
RF SWP OUT
5V OUT
A CONT OUT
SWD9V OUT
KGK1
CN10(RED)
MC OUT
1H DELAY CONT
GND
A CONT IN
DOC PULSE OUT
DOC CTL IN
MC CTL IN
MC IN
VIDEO IN(Y)
VIDEO IN(X)
VIDEO OUT(Y)
VIDEO OUT(X)
CN4(WHT)
VTR/TV IN
COMP SYNC
GND
RF SWP
4.43MHz(Y)
4.43MHz(X)
TO SS-50 BOARD CN502
CN6 (WHT)
COMP SYNC
TU VIDEO IN(Y)
TU VIDEO IN(X)
CN2 (WHT)
VIDEO OUT(X)
MC/RF SW
AUDIO OUT(Y)
AUDIO OUT(X)
TO RF MODULATOR
CN1(BLK)
S/F SEL
LINE
AUDIO(L+R)IN(Y)
AUDIO(L+R)IN(X)
AUDIO R IN(Y)
AUDIO R IN(X)
AUDIO L IN(Y)
AUDIO L IN(X)
TO AF-14 BOARD CN009
CNJ1
VIDEO OUT
VIDEO IN
TEST SIGNAL
OFF
ON
SW901
CN3 (WHT)
V REC P
PB+A INS
V MUTE
GND
MC
TO SS-50 BOARD CN103
EUROCONNECTOR
CN11 (BLK)
MUTE
TO AF-14 BOARD CN016
IC401
IC9
IC3
IC20
IC6
IC901
IC701
DL1
DL401
LPF1
BPF1

4-4. SS-50 (SERVO, SYSTEM CONTROL), DR-33 (SYSTEM CONTROL, SIGNAL TRANSLATION), RD-17 (ROTATION DETECTOR), LM-17 (LOADING MOTOR), R STATOR (REEL MOTOR), CAPSTAN MOTOR SCHEMATIC DIAGRAMS

– Ref. No. SS-50 BOARD: 2,000 series, DR-33 BOARD: 9,300 series, RD-17 BOARD: 9,400 series, LM-17 BOARD: 9,400 series, R STATOR BOARD: 9,100 series, CAPSTAN MOTOR BOARD: 9,200 series –



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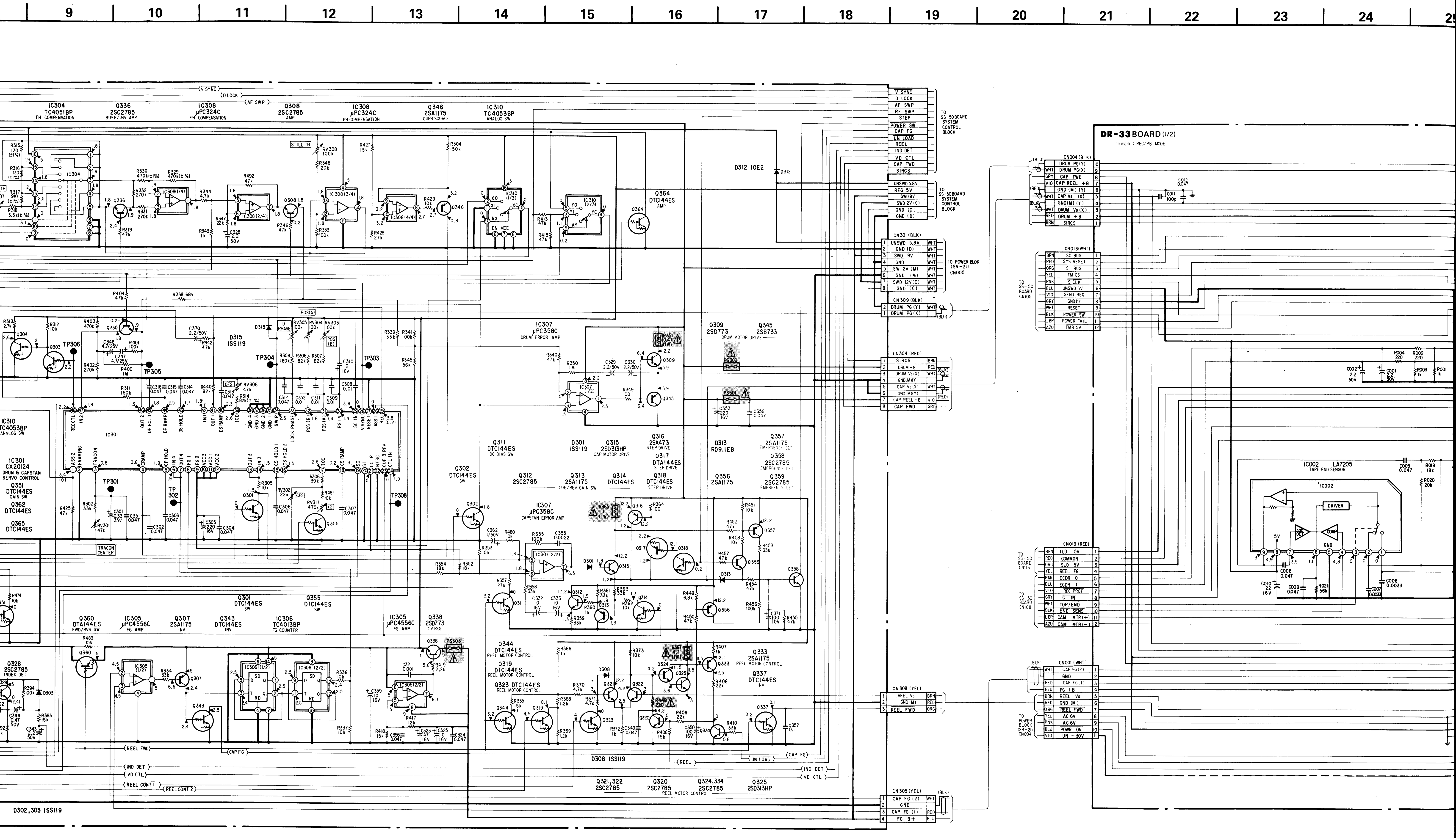
J
SS-50 BOARD (1/2)
no mark : REC/PB MODE
( ) : PB MODE
* : CAN NOT BE MEASURED
V SYNC
D LOCK
AF SWP
Q305 2SC2785 V SYNC SEP
Q306 2SC2785 INV
Q501 2SC2785 AMP
IC501 MB88201-191G AFM SW GEN
IC304 TC4051BP FH COMPENSATION
Q336 2SC2785 BUFF/INV AMP
IC308 µPC324C FH COMPENSATION
Q308 2SC2785 AMP
IC308 µPC324C FH COMPENSATION
Q346 2SA1175 CURR SOURCE
IC310 TC4053BP ANALOG SW
Q364 DTC144ES AMP
L502 47µH
L501 100µH
CN302 (WHT)
4.43MHz (X)
4.43MHz (Y)
RF SWP
GND
COMP SYNC
VTR/TV OUT
TO YC-40 BOARD CN004
TP307
CUE fH
STILL fH
fH COMP
JOG
MUTE + V DET
REEL FWD
Q339 DTC144ES GAIN SW
Q340 DTC144ES NOR GATE
Q350 DTC144ES NAND GATE
Q341 DTC144ES INV
D309 MC921
D310 MC921
D305 MC921
D316-318 1SS119
D322 1SS119
Q304 DTC144ES DP RAMP
Q303 DTC144ES INV
Q330 2SC2785 SW
Q366 2SC2785
TP306
TP305
TP304
TP303
D315 1SS119
POS(A)
POS(B)
D PHASE
IC307 µPC358C DRUM ERROR AMP
Q309 2SD773
V MUTE
VTR/TV
COMP SYNC
fH COMP
JOG
MUTE + V DET
REEL FWD
REEL CONT 1
CAP
X2
ASB
BKGP
REC P
DRUM
IND WRT
IND ERS
REEL CONT 2
HC CONT
SLOW TRACON
X1 SIG
SO
TO SS-50 BOARD SYSTEM CONTROL BLOCK
IC310 TC4053BP ANALOG SW
IC301 CX20124 DRUM & CAPSTAN SERVO CONTROL
Q351 DTC144ES GAIN SW
Q362 DTC144ES
Q365 DTC144ES
Q361 DTC144ES ASB, X2 SW
Q331 DTC144ES
Q335 DTC144ES HC CONTROL
Q329 2SA1175
IC309 TC4066BP ANALOG SW
TP301
TP302
TP308
TRACON CENTER
Q311 DTC144ES DC BIAS SW
D301 1SS119
Q315 2SD1313HP CAP MOTOR DRIVE
Q316 2SA473 STEP DRIVE
Q317 DTA144ES STEP DRIVE
Q318 DTC144ES STEP DRIVE
D313 RD9.1EB
Q356 2SA1175
Q302 DTC144ES SW
Q312 2SC2785
Q313 2SA1175 CUE/REV GAIN SW
Q314 DTC144ES
IC307 µPC358C CAPSTAN ERROR AMP
CN303 (WHT)
X1 SIG
SLOW TRACON
TRACON
TRACON +B
CN306 (WHT)
CTL (X)
CTL (Y)
TO FR-20 BOARD CN1
CTL HEAD
D314 RD3.0E-L1
Q327 DTC144ES ASB, X2 SW
Q326 DTC144ES INV
Q310 DTC144ES HC CONTROL
Q301 DTC144ES SW
Q355 DTC144ES SW
Q360 DTA144ES FWD/RVS SW
IC305 µPC4556C FG AMP
Q307 2SA1175 INV
Q343 DTC144ES INV
IC306 TC4013BP FG COUNTER
IC305 µPC4556C FG AMP
Q338 2SD773 5V REG
PS303
Q344 DTC144ES REEL MOTOR CONTROL
Q319 DTC144ES REEL MOTOR CONTROL
Q323 DTC144ES REEL MOTOR CONTROL
CN307 (RED)
GND
PB CTL
REV CTL
Q363 2SC2785
IC302 CX20069 CTL & INDEX CONTROL
D320 MC921
Q342 2SA1175 NOR GATE
Q328 2SC2785 INDEX DET
D306
D304
D307
D311
REEL FWD
IND DET
VD CTL
REEL CONT 1
REEL CONT 2
CAP FG
REEL
ASB
IND WRT
IND ERS
D308 1SS119
Q321,322 2SC2785
Q320 2SC2785 REEL MOTOR CONTROL
Q324,334 2SC2785
D311 1SS119
D307 MC921
D306 MC921
D304 MC921
D302,303 1SS119

ECTOR), LM-17 (LOADING MOTOR), R STATOR (REEL MOTOR), CAPSTAN MOTOR SCHEMATIC DIAGRAMS

RD: 9,100 series, CAPSTAN MOTOR BOARD: 9,200 series –



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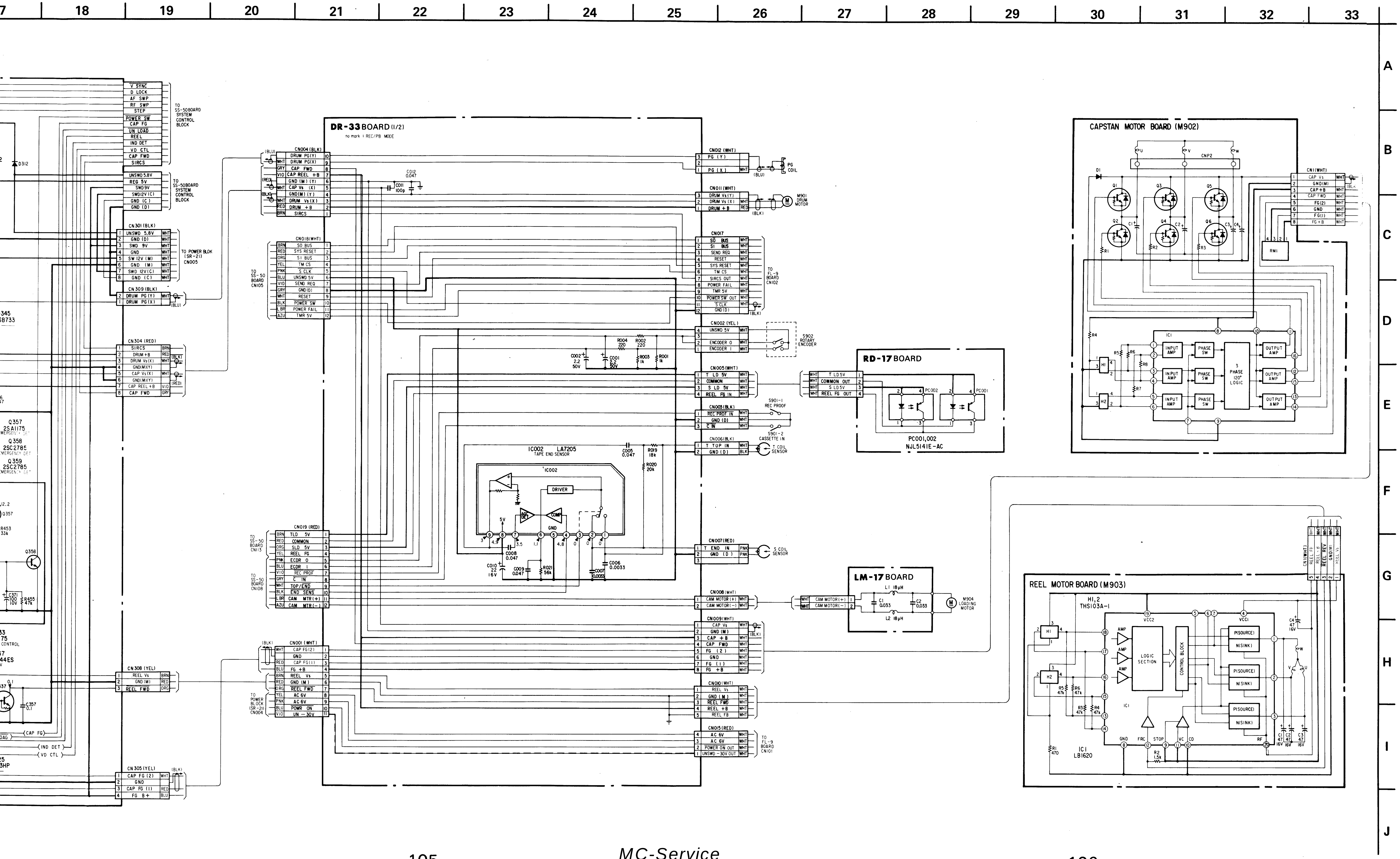
IC304 TC4051BP FH COMPENSATION
Q336 2SC2785 BUFF/INV AMP
IC308 μPC324C FH COMPENSATION
Q308 2SC2785 AMP
IC308 μPC324C FH COMPENSATION
Q346 2SA1175 CURR SOURCE
IC310 TC4053BP ANALOG SW
V SYNC
D LOCK
AF SWP
STILL FH
D312 10E2
Q364 DTC144ES AMP
V SYNC
D LOCK
AF SWP
RF SWP
STEP
POWER SW
CAP FG
UN LOAD
REEL
IND DET
VD CTL
CAP FWD
SIRCS
TO SS-50BOARD SYSTEM CONTROL BLOCK
UNSWD 5.8V
REG 5V
SWD9V
SWD12V (C)
GND (C)
GND (D)
TO SS-50BOARD SYSTEM CONTROL BLOCK
CN301 (BLK)
UNSWD 5.8V
GND (D)
SWD 9V
GND
SW 12V (M)
GND (M)
SWD 12V (C)
GND (C)
TO POWER BLOK (SR-21) CN005
CN309 (BLK)
DRUM PG (Y)
DRUM PG (X)
IC307 μPC358C DRUM ERROR AMP
D315 1SS119
Q309 2SD773
Q345 2SB733
DRUM MOTOR DRIVE
PS302
PS301
CN304 (RED)
SIRCS
DRUM +B
DRUM Vs (X)
GND (M) (Y)
CAP Vs (X)
GND (M) (Y)
CAP REEL +B
CAP FWD
IC310 TC4053BP ANALOG SW
IC301 CX20124 DRUM & CAPSTAN SERVO CONTROL
Q351 DTC144ES GAIN SW
Q362 DTC144ES
Q365 DTC144ES
TP306
TP305
TP304
TP303
TP301
TP302
TP308
TRACON CENTER
Q311 DTC144ES DC BIAS SW
D301 1SS119
Q315 2SD313HP CAP MOTOR DRIVE
Q316 2SA473 STEP DRIVE
Q317 DTA144ES STEP DRIVE
Q318 DTC144ES STEP DRIVE
D313 RD9.1EB
Q357 2SA1175 EMERGENCY DET
Q358 2SC2785 EMERGENCY DET
Q359 2SC2785 EMERGENCY DET
Q312 2SC2785
Q313 2SA1175 CUE/REV GAIN SW
Q314 DTC144ES
Q356 2SA1175
Q302 DTC144ES SW
IC307 μPC358C CAPSTAN ERROR AMP
Q301 DTC144ES SW
Q355 DTC144ES SW
Q360 DTA144ES FWD/RVS SW
IC305 μPC4556C FG AMP
Q307 2SA1175 INV
Q343 DTC144ES INV
IC306 TC4013BP FG COUNTER
IC305 μPC4556C FG AMP
Q338 2SD773 5V REG
PS303
Q328 2SC2785 INDEX DET
Q344 DTC144ES REEL MOTOR CONTROL
Q319 DTC144ES REEL MOTOR CONTROL
Q323 DTC144ES REEL MOTOR CONTROL
Q333 2SA1175 REEL MOTOR CONTROL
Q337 DTC144ES INV
D308 1SS119
Q321,322 2SC2785
Q320 2SC2785
Q324,334 2SC2785
Q325 2SD313HP
REEL MOTOR CONTROL
D302,303 1SS119
REEL FWD
CAP FG
IND DET
VD CTL
REEL CONT 1
REEL CONT 2
REEL
UN LOAD
CAP FG
IND DET
VD CTL
CN308 (YEL)
REEL Vs
GND
REEL FWD
CN305 (YEL)
CAP FG (2)
GND
CAP FG (1)
FG B+
DR-33 BOARD (1/2)
no mark : REC/PB MODE
CN004 (BLK)
DRUM PG (Y)
DRUM PG (X)
CAP FWD
CAP REEL +B
GND (M) (Y)
CAP Vs (X)
GND (M) (Y)
DRUM Vs (X)
DRUM +B
SIRCS
CN018 (WHT)
SO BUS
SYS RESET
SI BUS
TM CS
S CLK
UNSWD 5V
SEND REQ
GND (D)
RESET
POWER SW
POWER FAIL
TMR 5V
TO SS-50 BOARD CN105
IC002 LA7205 TAPE END SENSOR
DRIVER
COMP
GND
CN019 (RED)
TLD 5V
COMMON
SLD 5V
REEL FG
ECDR 0
ECDR 1
REC PROF
C IN
TOP/END
END SENS
CAM MTR (+)
CAM MTR (−)
TO SS-50 BOARD CN113
TO SS-50 BOARD CN108
CN001 (WHT)
CAP FG (2)
GND
CAP FG (1)
FG +B
REEL FWD
GND (M)
REEL FWD
AC 6V
AC 6V
POWR ON
UN −30V
TO POWER BLOCK (SR-21) CN004

MC-Service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I
J
V SYNC
D LOCK
AF SWP
RF SWP
STEP
POWER SW
CAP FG
UN LOAD
REEL
IND DET
VD CTL
CAP FWD
SIRCS
TO SS-50BOARD SYSTEM CONTROL BLOCK
UNSWD 5.8V
REG 5V
SWD 9V
SWD12V(C)
GND (C)
GND (D)
CN301 (BLK)
TO POWER BLOK (SR-21) CN005
CN309 (BLK)
DRUM PG(Y)
DRUM PG(X)
CN304 (RED)
CN308 (YEL)
REEL Vs
GND (M)
REEL FWD
CN305 (YEL)
CAP FG (2)
GND
CAP FG (1)
FG B+
D312
Q357 2SA1175
Q358 2SC2785
Q359 2SC2785
DR-33 BOARD (1/2)
no mark : REC/PB MODE
CN004 (BLK)
DRUM PG(Y)
DRUM PG(X)
CAP FWD
CAP REEL +B
GND (M) (Y)
CAP Vs (X)
GND(M) (Y)
DRUM Vs (X)
DRUM +B
SIRCS
CN018 (WHT)
TO SS-50 BOARD CN105
S0 BUS
SYS RESET
S1 BUS
TM CS
S CLK
UNSWD 5V
SEND REQ
GND(D)
RESET
POWER SW
POWER FAIL
TMR 5V
CN019 (RED)
TO SS-50 BOARD CN113
TO SS-50 BOARD CN108
TLD 5V
COMMON
SLD 5V
REEL FG
ECDR 0
ECDR 1
REC PROF
C IN
TOP/END
END SENS
CAM MTR(+)
CAM MTR(−)
CN001 (WHT)
TO POWER BLOCK (SR-21) CN004
CAP FG(2)
CAP FG(1)
FG +B
REEL Vs
REEL FWD
AC 6V
POWR ON
UN −30V
C012 0.047
C011 100p
IC002 LA7205
TAPE END SENSOR
DRIVER
COMP
GND
C008 0.047
C009 0.047
C010 22 16V
R021 56k
C007 0.0033
C006 0.0033
C005 0.047
R019 18k
R020 20k
C002 2.2 50V
C001 2.2 50V
R004 220
R002 220
R003 1k
R001 1k
CN012 (WHT)
PG (Y)
PG (X)
PG COIL
CN011 (WHT)
DRUM Vs(Y)
DRUM Vs (X)
DRUM +B
M901 DRUM MOTOR
CN017
TO FL-9 BOARD CN102
SIRCS OUT
POWER FAIL
POWER SW OUT
CN002 (YEL)
UNSWD 5V
ENCODER 0
ENCODER 1
S902 ROTARY ENCODER
CN005 (WHT)
T LD 5V
COMMON
S LD 5V
REEL FG IN
CN003 (BLK)
REC PROF IN
GND (D)
C IN
S901-1 REC PROOF
S901-2 CASSETTE IN
CN006 (BLK)
T TOP IN
GND (D)
T COIL SENSOR
CN007 (RED)
T END IN
S COIL SENSOR
CN008 (WHT)
CAM MOTOR (+)
CAM MOTOR (−)
CN009 (WHT)
CAP Vs
GND (M)
CAP +B
CAP FWD
FG (2)
FG (1)
FG +B
CN010 (WHT)
REEL Vs
GND (M)
REEL FWD
REEL +B
REEL FB
CN015 (RED)
AC 6V
POWER ON OUT
UNSWD −30V OUT
TO FL-9 BOARD CN101
RD-17 BOARD
T LD 5V
COMMON OUT
S LD 5V
REEL FG OUT
PC002
PC001
PC001,002 NJL5141E-AC
LM-17 BOARD
L1 18μH
L2 18μH
C1 0.033
C2 0.033
M904 LOADING MOTOR
CAPSTAN MOTOR BOARD (M902)
CNP2
D1
Q1
Q2
Q3
Q4
Q5
Q6
R1
R2
R3
R4
R5
R6
R7
R8
RM1
CN1 (WHT)
CAP Vs
GND (M)
CAP +B
CAP FWD
FG(2)
GND
FG(1)
FG +B
IC1
INPUT AMP
PHASE SW
3 PHASE 120° LOGIC
OUTPUT AMP
H1
H2
REEL MOTOR BOARD (M903)
CN1 (WHT)
REEL FB
REEL +B
REEL FWD
GND (M)
REEL Vs
H1, 2 THS103A-1
VCC2
VCC1
AMP
LOGIC SECTION
CONTROL BLOCK
P(SOURCE)
N(SINK)
GND
FRC
STOP
VC
CD
RF
IC1 LB1620
R1 470
R2 1.5k
R3 47k
R4 47k
R5 47k
R6 47k
C1 47 16V
C2 47 16V
C3 47 16V
C4 47 16V

SS-50 (SERVO, SYSTEM CONTROL), DR-33 (SYSTEM CONTROL, SIGNAL TRANSLATION), RD-17 (ROTATION DETECTOR), LM-17 (LOADING MOTOR), R STATOR (REEL MOTOR), CAPSTAN MOTOR PRINTED WIRING BOARDS

– Ref. No. SS-50 BOARD: 2,000 series, DR-33 BOARD: 9,300 series, RD-17 BOARD: 9,400 series, LM-17 BOARD: 9,400 series, R STATOR BOARD: 9,100 series, CAPSTAN MOTOR BOARD: 9,200 series –

Note on Schematic Diagram:

- All resistors are in ohms, $^1/_6$W unless otherwise noted. kΩ: 1000 Ω, MΩ: 1000 kΩ
- All capacitors are in μF unless otherwise noted. p: μμF 50WV or less are not indicated except for electrolytics.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.
- The red lines show the main voltages.
- All voltages are dc measured with a VOM (10 MΩ).
- ▬▬ : B+ bus.
- ▬ ▬ ▬ : B– bus.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

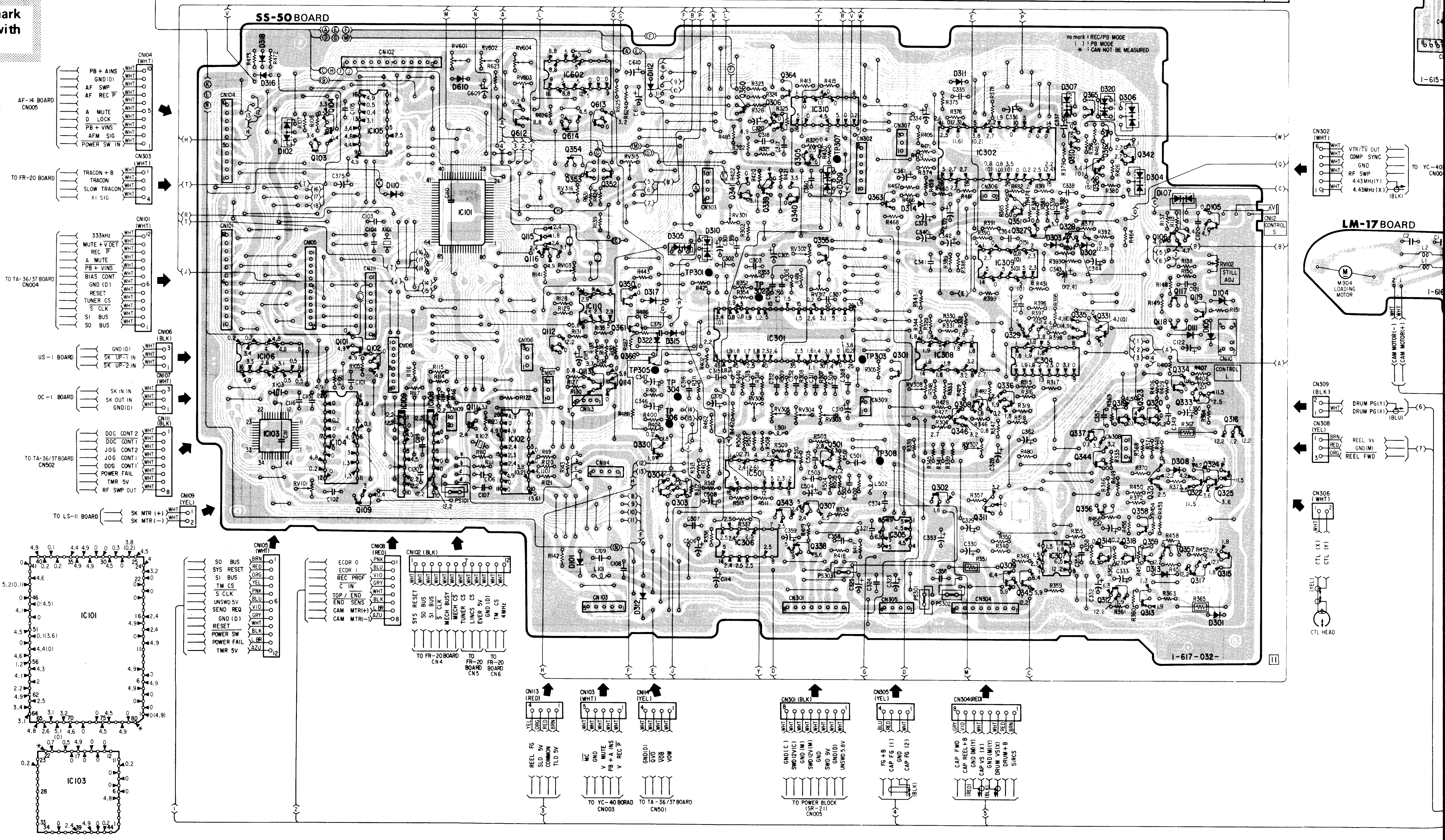
Note on Printed Wiring Board:

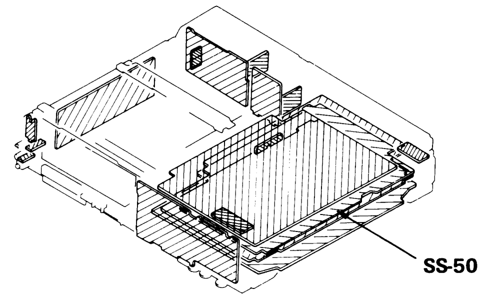
- ○— : Indicates a leadwire mounted on the component side.
- ●— : Indicates a leadwire mounted on the printed side.
- ░ : soldering side.
- ░ : B+ pattern
- ░ : component side.
- Digital transistor (SS-50: Q101, 102, 103, 104, 105, 109, 111, 112, 301, 302, 303, 304, 310, 311, 314, 317, 318, 319, 323, 326, 327, 331, 335, 337, 339, 340, 341, 343, 344, 350, 351, 352, 353, 354, 355, 360, 361, 362, 364, 365, 612, 613, 614) transistors with resistors.

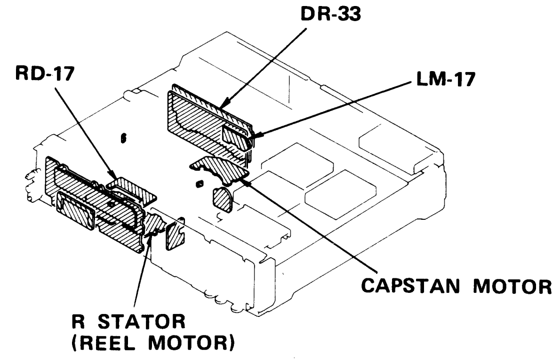
  Refer to the SS-50 baord schematic diagram for digital transistor.

When indicating parts by reference number, please include the board name.

	6	7	8	9	10	11	12	13	14	15
Q·IC	IC106 IC103	103 104 IC105 101 102 IC104 109 IC109	IC108 IC101 612 111 IC102	115 116 IC602 614 354 353 352 613 IC110 113 114 350 361 366 112	360 341 330 304,303 IC306	364 306 339 340 305 IC310 355 IC301 501 IC501 343 307 338	363 301 IC308 346 302 IC305	IC302 IC309 351 327 329 308 336 IC304 311 309 345 IC307	365 362 310 328 326 342 335 331 106 117 118 337 319 323 320 334 344 321 356 358 314 318 359 357 312 313	105 119 333 316 322,324,325 317 315
D	318 316 102	110	610	101 312	112 317 305 310 322 315	309	314 311	307 303	302 320 306 304 107 308 313	111 105 104 301
ADJ	RV101		RV601 RV602 RV604 RV603	RV316 RV103 RV315	RV301	RV302 RV317 RV306,RV305,RV304,RV303	RV308	RV307		RV102
TP					305 306 304 301	302 307	303 308			


TO QV-1 BOARD
SS-50 BOARD
no mark : REC/PB MODE
( ) : PB MODE
* : CAN NOT BE MEASURED
AF-14 BOARD CN005
CN104 (WHT)
PB + AINS
GND (D)
AF SWP
AF REC P
A MUTE
D LOCK
PB + VINS
AFM SIG
POWER SW IN
TO FR-20 BOARD
CN303 (WHT)
TRACON + B
TRACON
SLOW TRACON
XI SIG
TO TA-36/37 BOARD CN004
CN101 (WHT)
333kHz
MUTE + V DET
REC P
A MUTE
PB + VINS
BIAS CONT
GND (D)
RESET
TUNER CS
S CLK
SI BUS
SO BUS
US-1 BOARD
CN106 (BLK)
GND (D)
SK UP-1 IN
SK UP-2 IN
OC-1 BOARD
CN107 (WHT)
SK IN IN
SK OUT IN
GND (D)
TO TA-36/37 BOARD CN502
CN111 (BLK)
DOC CONT 2
DOC CONT 1
JOG CONT 2
JOG CONT 1
DOG CONT 1'
POWER FAIL
TMR 5V
RF SWP OUT
TO LS-11 BOARD
CN109 (YEL)
SK MTR (+)
SK MTR (–)
IC101
IC103
CN105 (WHT)
SO BUS
SYS RESET
SI BUS
TM CS
S CLK
UNSWD 5V
SEND REQ
GND (D)
RESET
POWER SW
POWER FAIL
TMR 5V
CN108 (RED)
ECDR 0
ECDR 1
REC PROF
C IN
TOP / END
END SENS
CAM MTR(+)
CAM MTR(–)
CN102 (BLK)
SYS RESET
SO BUS
SI BUS
S CLK
MECH BUSY
MECH CS
TUNER CS
LINCS CS
EVER 5V
GND (D)
TM CS
4MHz
TO FR-20 BOARD CN4
TO FR-20 BOARD CN5
TO FR-20 BOARD CN6
CN113 (RED)
REEL FG
SLD 5V
COMMON
TLD 5V
CN103 (WHT)
MC
GND
V MUTE
PB + A INS
V REC P
TO YC-40 BORAD CN003
CN114 (YEL)
GND (D)
QVD
VOB
VOW
TO TA-36/37 BOARD CN501
CN301 (BLK)
GND (C)
SWD 12V (C)
GND (M)
SWD 12V (M)
GND
SWD 9V
GND (D)
UNSWD 5.8V
TO POWER BLOCK (SR-21) CN005
CN305 (YEL)
FG + B
CAP FG (1)
GND
CAP FG (2)
CN304 (RED)
CAP FWD
CAP REEL + B
GND (M)(Y)
CAP VS (X)
GND (M)(Y)
DRUM VS (X)
DRUM + B
SIRCS
CN302 (WHT)
VTR/TV OUT
COMP SYNC
GND
RF SWP
4.43MHz (Y)
4.43MHz (X)
TO YC-40 CN00
CN112 CONTROL S
STILL ADJ
CONTROL L
LM-17 BOARD
M904 LOADING MOTOR
CAM MOTOR (–)
CAM MOTOR (+)
CN309 (BLK)
DRUM PG (Y)
DRUM PG (X)
CN308 (YEL)
REEL Vs
GND (M)
REEL FWD
CN306 (WHT)
CTL (X)
CTL (Y)
CTL HEAD
1-617-032-
1-615-
1-616

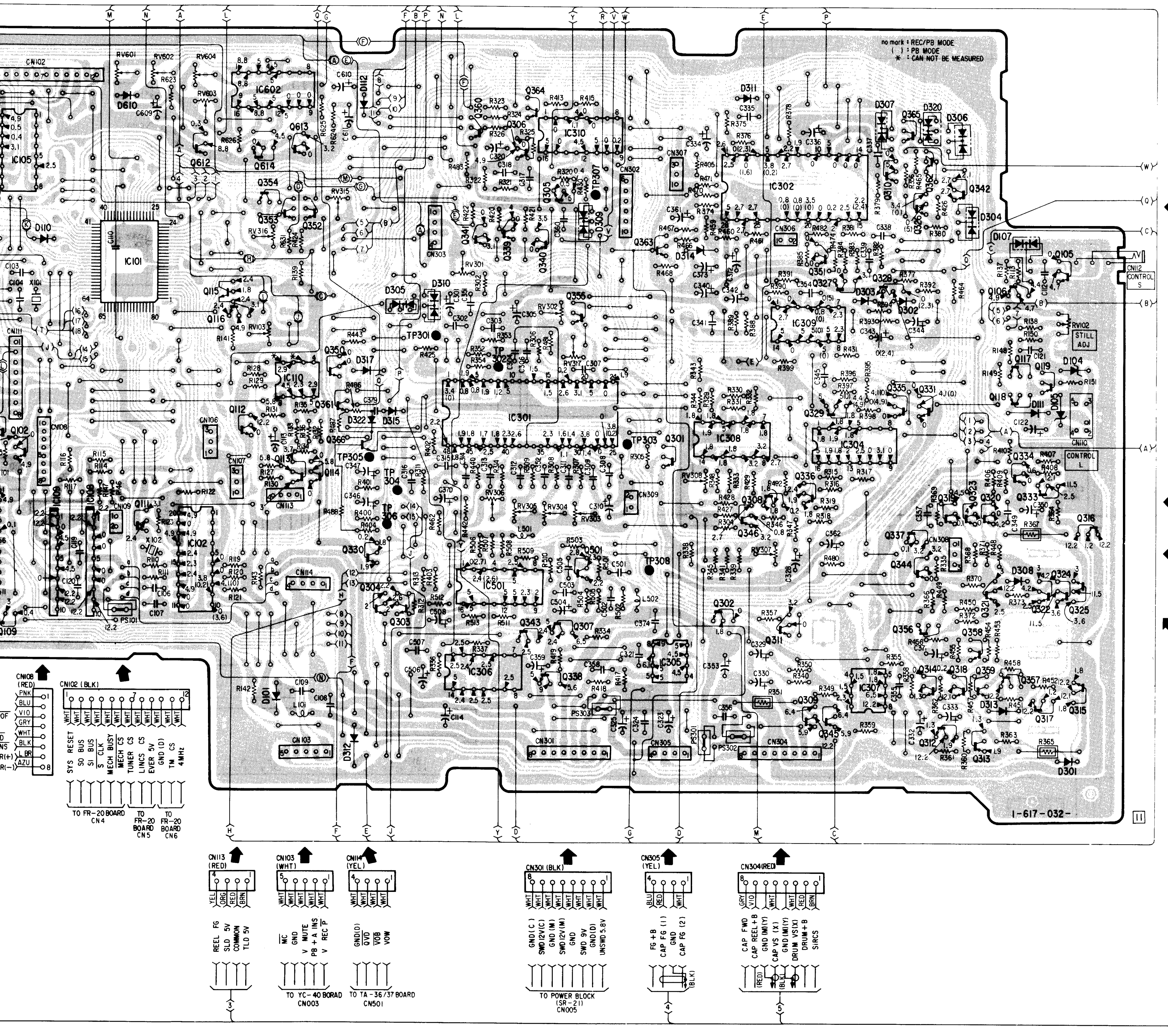


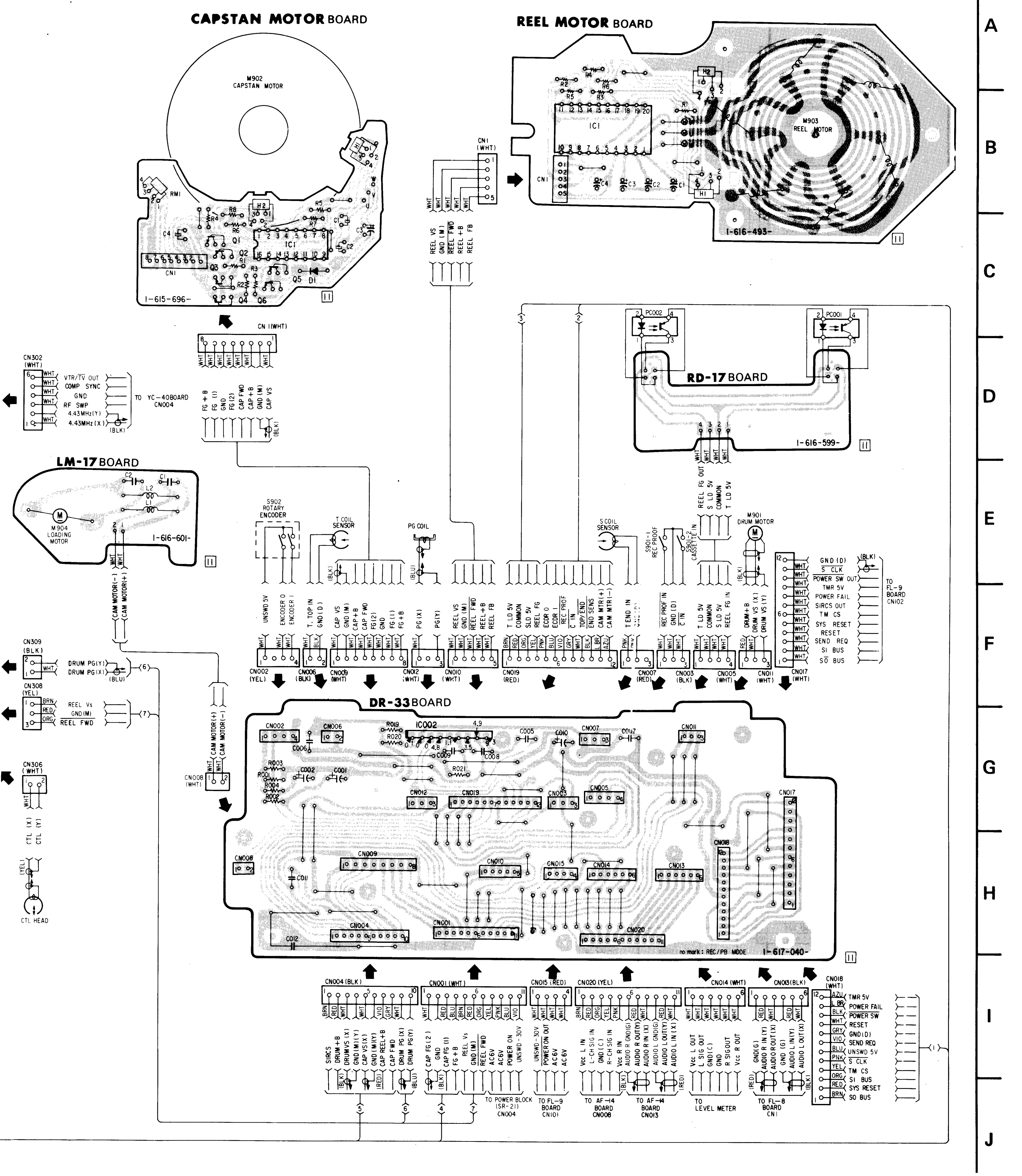

DR-33
RD-17
LM-17
CAPSTAN MOTOR
R STATOR (REEL MOTOR)

OTATION DETECTOR), LM-17 (LOADING MOTOR), R STATOR (REEL MOTOR), CAPSTAN MOTOR PRINTED WIRING BOARDS

s, R STATOR BOARD: 9,100 series, CAPSTAN MOTOR BOARD: 9,200 series –

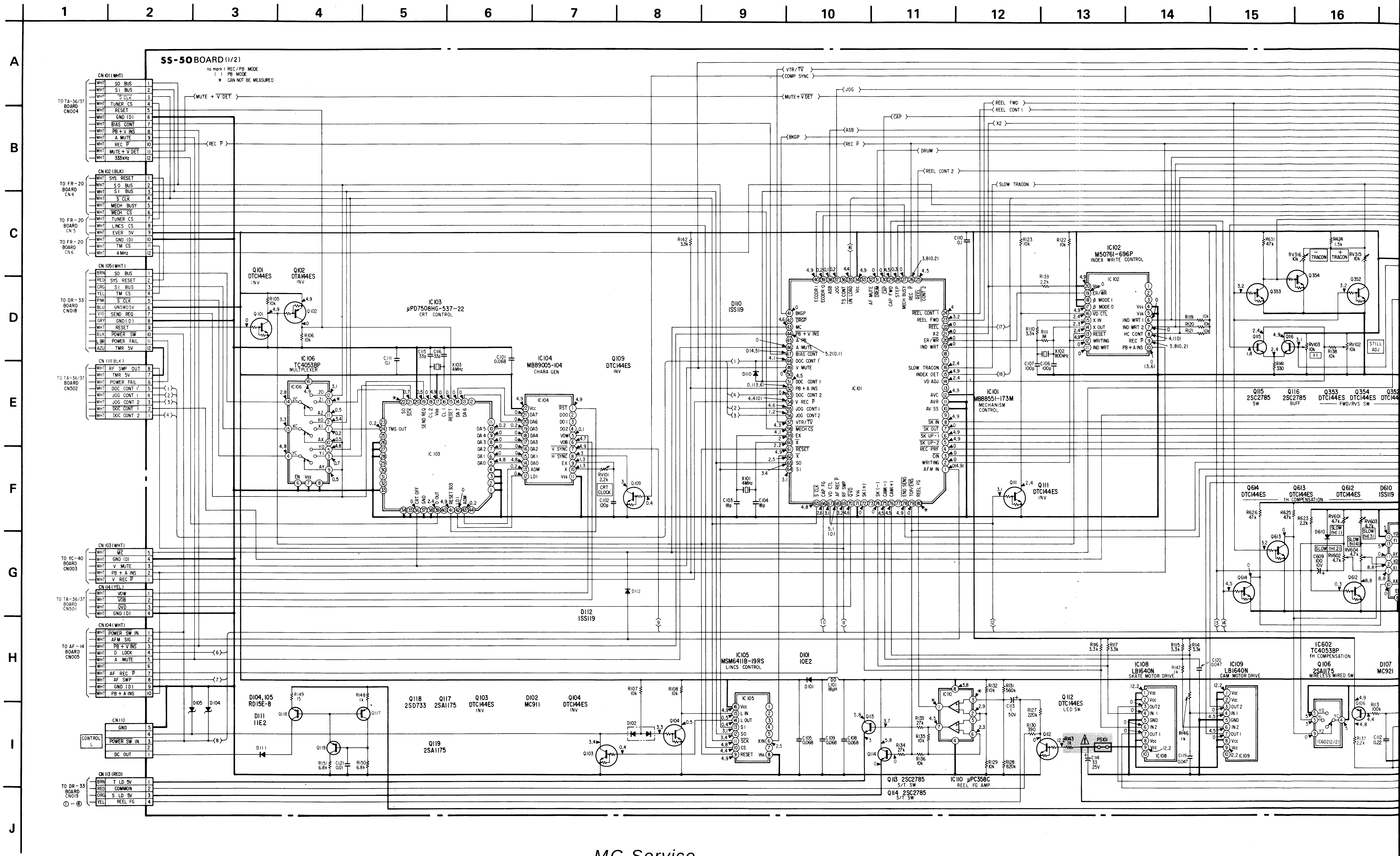
	7	8	9	10	11	12	13	14	15
Q · IC	IC105 01 102 IC109 IC108 109	IC101 612 111 IC102	115 116 IC602 614 354 613 353 352 350 361 366 IC110 113 114 112	360 341 330 304,303 IC306	364 306 339 340 305 IC310 355 IC301 501 IC501 343 307 338	363 301 IC308 346 302 IC305	IC302 IC309 351 327 329 310 328 308 336 IC304 311 309 345 IC307	365 362 326 342 335 331 106 117 118 337 319 323 320 334 344 321 356 358 314 318 359 357 312 313	105 119 333 316 322,324,325 317 315
D	110	610	101 312	112 317 305 310 322 315	309	314 311	307 303	302 320 306 304 313 308 107	111 105 104 301
ADJ		RV601 RV602 RV604 RV603	RV316 RV103 RV315	RV301	RV302 RV317 RV306,RV305,RV304,RV303	RV308	RV307		RV102
TP				305 306 304 301	302 307	303 308			


no mark : REC/PB MODE
( ) : PB MODE
✱ : CAN NOT BE MEASURED
IC101
IC102
IC105
IC301
IC302
IC304
IC305
IC306
IC307
IC308
IC309
IC310
IC501
IC602
CN102 (BLK)
CN108 (RED)
CN112 CONTROL S
STILL ADJ
CONTROL L
SYS RESET
SO BUS
SI BUS
S CLK
MECH BUSY
MECH CS
TUNER CS
LINCS
EVER 5V
GND (D)
TM CS
4MHz
TO FR-20 BOARD CN4
TO FR-20 BOARD CN5
TO FR-20 BOARD CN6
CN113 (RED)
REEL FG
SLD 5V
COMMON
TLD 5V
CN103 (WHT)
MC
GND
V MUTE
PB + A INS
V REC P
TO YC-40 BORAD CN003
CN114 (YEL)
GND(D)
QVD
VOB
VOW
TO TA-36/37 BOARD CN501
CN301 (BLK)
GND(C)
SWD12V(C)
GND (M)
SWD12V(M)
GND
SWD 9V
GND(D)
UNSWD 5.8V
TO POWER BLOCK (SR-21) CN005
CN305 (YEL)
FG +B
CAP FG (1)
GND
CAP FG (2)
CN304(RED)
CAP FWD
CAP REEL+B
GND (M)(Y)
CAP VS (X)
GND (M)(Y)
DRUM VS(X)
DRUM+B
SIRCS
1-617-032-


CAPSTAN MOTOR BOARD
M902 CAPSTAN MOTOR
RM1
IC1
CN1
1-615-696-
CN 1 (WHT)
FG + B
FG (1)
GND
FG (2)
CAP FWD
CAP + B
GND (M)
CAP VS
REEL MOTOR BOARD
M903 REEL MOTOR
1-616-493-
CN1 (WHT)
REEL VS
GND (M)
REEL FWD
REEL + B
REEL FB
RD-17 BOARD
PC002
PC001
1-616-599-
REEL FG OUT
S LD 5V
COMMON
T LD 5V
CN302 (WHT)
VTR/TV OUT
COMP SYNC
GND
RF SWP
4.43MHz(Y)
4.43MHz(X)
TO YC-40BOARD CN004
LM-17 BOARD
M904 LOADING MOTOR
1-616-601-
CAM MOTOR(-)
CAM MOTOR(+)
CN309 (BLK)
DRUM PG(Y)
DRUM PG(X)
CN308 (YEL)
REEL Vs
GND(M)
REEL FWD
CN306 (WHT)
CTL (X)
CTL (Y)
CTL HEAD
CN008 (WHT)
S902 ROTARY ENCODER
T COIL SENSOR
PG COIL
S COIL SENSOR
S901-1 REC PROOF
S901-2 CASSETTE IN
M901 DRUM MOTOR
UNSWD 5V
ENCODER 0
ENCODER 1
T. TOP IN
GND (D)
CAP VS
GND (M)
CAP+B
CAP FWD
FG (2)
GND
FG (1)
FG+B
PG (X)
PG (Y)
REEL VS
GND (M)
REEL FWD
REEL+B
REEL FB
T LD 5V
COMMON
SLD 5V
REEL FG
ECDR 0
ECDR 1
REC PROF
C IN
TOP/END
END SENS
CAM MTR(+)
CAM MTR(−)
T END IN
REC PROF IN
GND (D)
C IN
T LD 5V
COMMON
S LD 5V
REEL FG IN
DRUM+B
DRUM VS (X)
DRUM VS (Y)
CN002 (YEL)
CN006 (BLK)
CN009 (WHT)
CN012 (WHT)
CN010 (WHT)
CN019 (RED)
CN007 (RED)
CN003 (BLK)
CN005 (WHT)
CN011 (WHT)
CN017 (WHT)
GND (D)
S CLK
POWER SW OUT
TMR 5V
POWER FAIL
SIRCS OUT
TM CS
SYS RESET
RESET
SEND REQ
SI BUS
SO BUS
TO FL-9 BOARD CN102
DR-33 BOARD
IC002
no mark : REC/PB MODE
1-617-040-
CN004 (BLK)
SIRCS
DRUM+B
DRUMVS (X)
GND (M)(Y)
CAP VS(X)
GND (M)(Y)
CAP REEL+B
CAP FWD
DRUM PG (X)
DRUM PG(Y)
CN001 (WHT)
CAP FG (2)
GND
CAP FG (1)
FG + B
REEL Vs
GND (M)
REEL FWD
AC6V
AC6V
POWER ON
UNSWD - 30V
TO POWER BLOCK (SR-21) CN004
CN015 (RED)
UNSWD - 30V
POWER ON OUT
AC6V
AC6V
TO FL-9 BOARD CN101
CN020 (YEL)
Vcc L IN
L-CH SIG IN
GND (C)
R-CH SIG IN
Vcc R IN
AUDIO R GND(G)
AUDIO R OUT(Y)
AUDIO R IN (X)
AUDIO L GND(G)
AUDIO L OUT(Y)
AUDIO L IN (X)
TO AF-14 BOARD CN008
TO AF-14 BOARD CN013
CN014 (WHT)
Vcc L OUT
L SIG OUT
GND(C)
GND
R SIG OUT
Vcc R OUT
TO LEVEL METER
CN013 (BLK)
GND(G)
AUDIO R IN (Y)
AUDIO R OUT (X)
GND (G)
AUDIO L IN(Y)
AUDIO L OUT (X)
TO FL-8 BOARD CN1
CN018 (WHT)
TMR 5V
POWER FAIL
POWER SW
RESET
GND(D)
SEND REQ
UNSWD 5V
S CLK
TM CS
SI BUS
SYS RESET
SO BUS
16
17
18
19
20
21
22
23
A
B
C
D
E
F
G
H
I
J

4-5. SS-50 (SERVO, SYSTEM CONTROL), QV-1 (SYSTEM CONTROL), OC-1 (SKIP SWITCH), US-1 (SKIP SWITCH), LS-11 (SKATE MOTOR) SCHEMATIC DIAGRAM

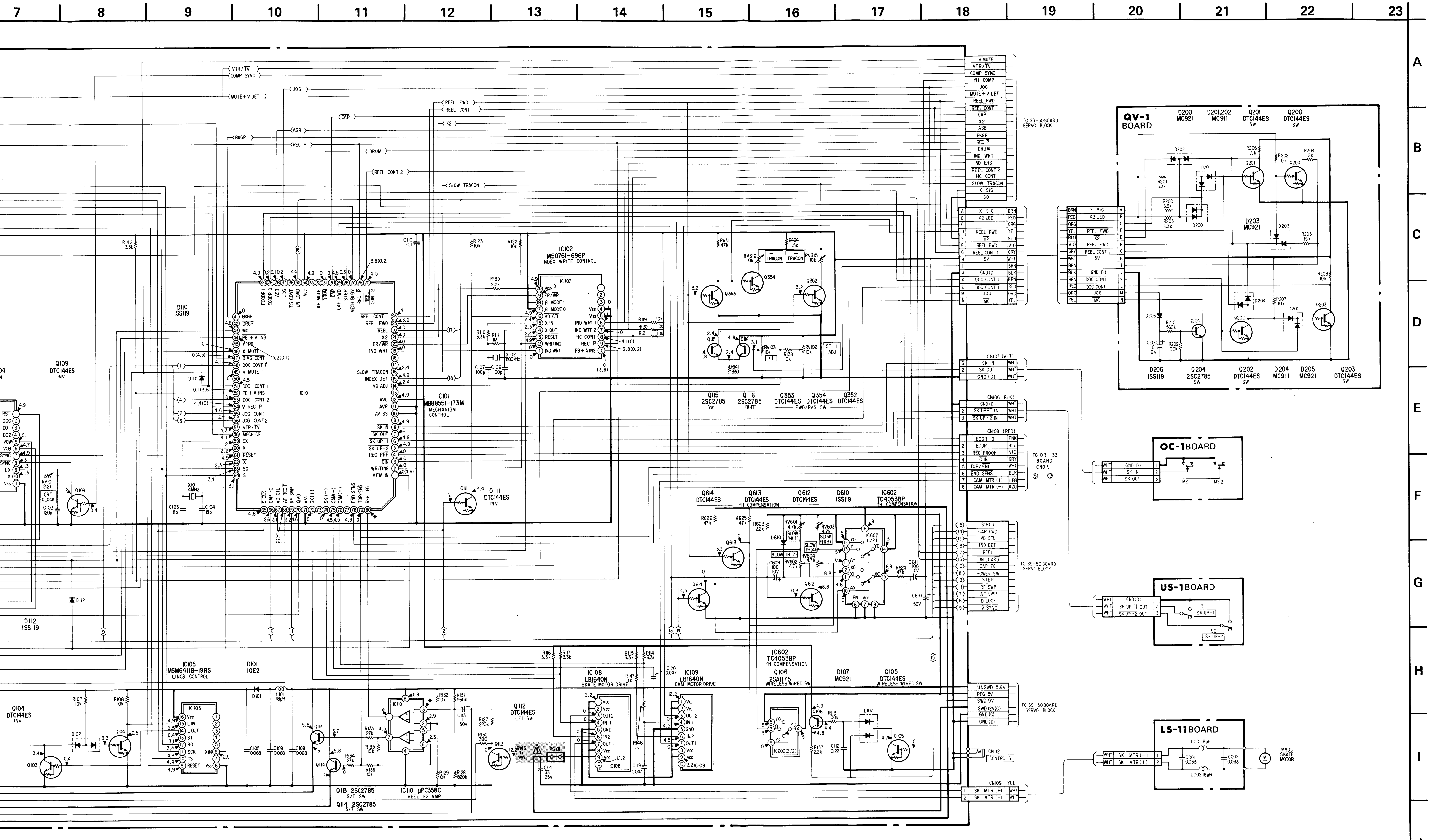
– Ref. No. SS-50 BOARD: 2,000 series, QV-1 BOARD: 8,000 series, OC-1 BOARD: 9,500 series, US-1 BOARD: 9,500 series, LS-11 BOARD: 9,500 series –



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I J
SS-50 BOARD (1/2)
no mark : REC/PB MODE
( ) : PB MODE
* : CAN NOT BE MEASURED
CN101 (WHT)
SO BUS
SI BUS
S CLK
TUNER CS
RESET
GND (D)
BIAS CONT
PB + V INS
A MUTE
REC P
MUTE + V DET
333kHz
TO TA-36/37 BOARD CN004
CN102 (BLK)
SYS RESET
MECH BUSY
MECH CS
LINCS CS
EVER 5V
TM CS
4MHz
TO FR-20 BOARD CN4
TO FR-20 BOARD CN5
TO FR-20 BOARD CN6
CN105 (WHT)
TO DR-33 BOARD CN018
UNSWD5V
SEND REQ
POWER SW
POWER FAIL
TMR 5V
CN111 (BLK)
RF SWP OUT
DOC CONT 1'
JOG CONT 1
JOG CONT 2
DOC CONT 1
DOC CONT 2
TO TA-36/37 BOARD CN502
CN103 (WHT)
MC
V MUTE
PB + A INS
V REC P
TO YC-40 BOARD CN003
CN114 (YEL)
VOW
VOB
OVD
TO TA-36/37 BOARD CN501
CN104 (WHT)
POWER SW IN
AFM SIG
D LOCK
AF REC P
AF SWP
TO AF-14 BOARD CN005
CN110
CONTROL L
DC OUT
CN113 (RED)
T LD 5V
COMMON
S LD 5V
REEL FG
TO DR-33 BOARD CN019
MUTE + V DET
REC P
Q101 DTC144ES INV
Q102 DTA144ES INV
IC103 μPD7508HG-537-22 CRT CONTROL
IC106 TC4053BP MULTIPLEXER
IC104 MB89005-104 CHARA GEN
Q109 DTC144ES INV
X103 4MHz
RV101 2.2k CRT CLOCK
D110 1SS119
D112 1SS119
IC101 MB88551-173M MECHANISM CONTROL
X101 4MHz
VTR/TV
COMP SYNC
JOG
CAP
ASB
BKGP
DRUM
REEL CONT 2
REEL FWD
REEL CONT 1
X2
SLOW TRACON
IC102 M50761-696P INDEX WRITE CONTROL
X102 800kHz
Q111 DTC144ES INV
Q115 2SC2785 SW
Q116 2SC2785 BUFF
Q353 DTC144ES
Q354 DTC144ES FWD/RVS SW
TRACON
STILL ADJ
Q614 DTC144ES
Q613 DTC144ES
Q612 DTC144ES
fH COMPENSATION
D610 1SS119
IC602 TC4053BP fH COMPENSATION
Q106 2SA1175 WIRELESS/WIRED SW
D107 MC921
D104, 105 RD15E-B
D111 11E2
Q118 2SD733
Q117 2SA1175
Q119 2SA1175
Q103 DTC144ES INV
D102 MC911
Q104 DTC144ES INV
IC105 MSM6411B-19RS LINCS CONTROL
D101 10E2
Q113 2SC2785 S/T SW
Q114 2SC2785 S/T SW
IC110 μPC358C REEL FG AMP
Q112 DTC144ES LED SW
PS101
IC108 LB1640N SKATE MOTOR DRIVE
IC109 LB1640N CAM MOTOR DRIVE

KIP SWITCH), LS-11 (SKATE MOTOR) SCHEMATIC DIAGRAM

series, LS-11 BOARD: 9,500 series –


7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
A
B
C
D
E
F
G
H
I
J
IC102 M50761-696P INDEX WRITE CONTROL
IC101 MB88551-173M MECHANISM CONTROL
IC105 MSM6411B-19RS LINCS CONTROL
IC108 LB1640N SKATE MOTOR DRIVE
IC109 LB1640N CAM MOTOR DRIVE
IC110 μPC358C REEL FG AMP
IC602 TC4053BP fH COMPENSATION
Q109 DTC144ES INV
Q104 DTC144ES INV
Q111 DTC144ES INV
Q112 DTC144ES LED SW
Q113 2SC2785 S/T SW
Q114 2SC2785 S/T SW
Q115 2SC2785 SW
Q116 2SC2785 BUFF
Q353 DTC144ES
Q354 DTC144ES FWD/RVS SW
Q352 DTC144ES
Q614 DTC144ES
Q613 DTC144ES fH COMPENSATION
Q612 DTC144ES
D610 1SS119
Q106 2SA1175 WIRELESS WIRED SW
D107 MC921
Q105 DTC144ES WIRELESS WIRED SW
D110 1SS119
D112 1SS119
D101 10E2
TO SS-50 BOARD SERVO BLOCK
TO DR-33 BOARD CN019 ⑤–⑫
QV-1 BOARD
D200 MC921
D201,202 MC911
Q201 DTC144ES SW
Q200 DTC144ES SW
D203 MC921
D206 1SS119
Q204 2SC2785 SW
Q202 DTC144ES SW
D204 MC911
D205 MC921
Q203 DTC144ES SW
OC-1 BOARD
US-1 BOARD
LS-11 BOARD
M905 SKATE MOTOR
CN107 (WHT)
CN106 (BLK)
CN108 (RED)
CN109 (YEL)
CN112 CONTROL S
PS101

MC-Service

SS-50 (SERVO, SYSTEM CONTROL), QV-1 (SYSTEM CONTROL), OC-1 (SKIP SWITCH), US-1 (SKIP SWITCH), LS-11 (SKATE MOTOR) PRINTED WIRING BOARDS

– Ref. No. SS-50 BOARD: 2,000 series, QV-1 BOARD: 8,000 series, OC-1 BOARD: 9,500 sereis, US-1 BOARD: 9,500 series, LS-11 BAORD: 9,500 series –

Note on Schematic Diagram:

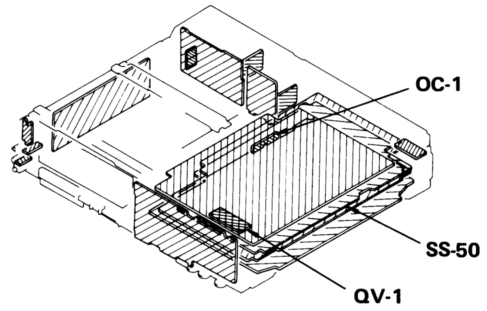
- All resistors are in ohms, 1/6 W unless otherwise noted. kΩ: 1000 Ω, MΩ: 1000 kΩ
- All capacitors are in μF unless otherwise noted. p: μμF 50WV or less are not indicated except for electrolytics.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.
- The red lines show the main voltages.
- All voltages are dc measured with a VOM (10 MΩ).
- ▬ : B+ bus.

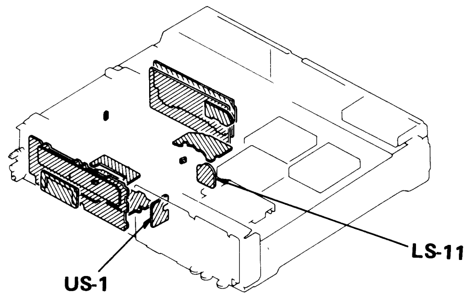
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note on Printed Wiring Board:

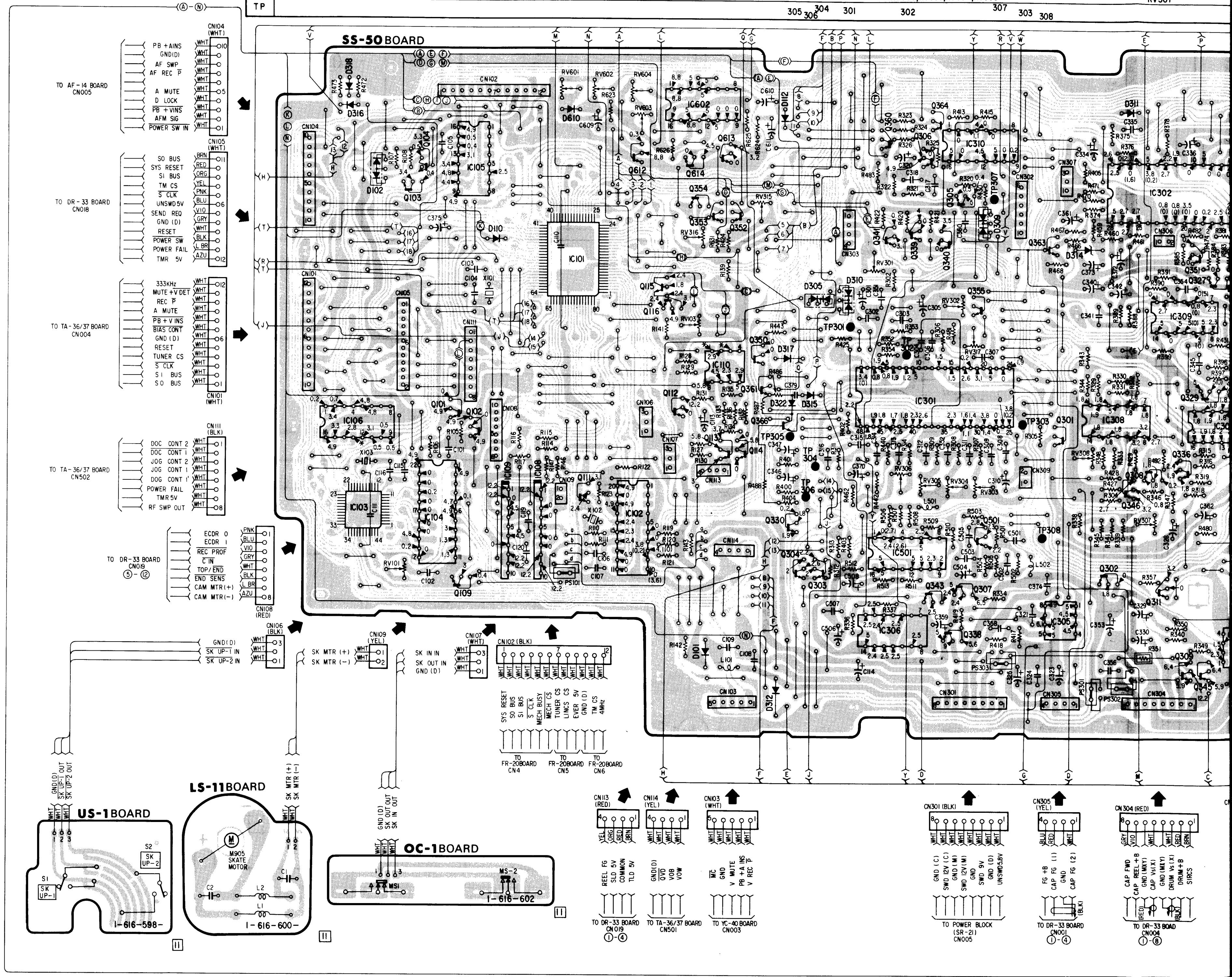
- ○— : Indicates a leadwire mounted on the component side.
- ●— : Indicates a leadwire mounted on the printed sied.
- ▒ : soldering side.
- ▒ : B+ pattern
- Digital transistor (SS-50: Q101, 102, 103, 104, 105, 109, 111, 112, 301, 302, 303, 304, 310, 311, 314, 317, 318, 319, 323, 326, 327, 331, 335, 337, 339, 340, 341, 343, 344, 350, 351, 352, 353, 354, 355, 360, 361, 362, 364, 365, 612, 613, 614. QV-1: Q200, 201, 202, 203) transistors with resistors.
  Refer to the SS-50 and QV-1 boards schematic diagram for digital transistor.

When indicating parts by reference number, please include the board name.

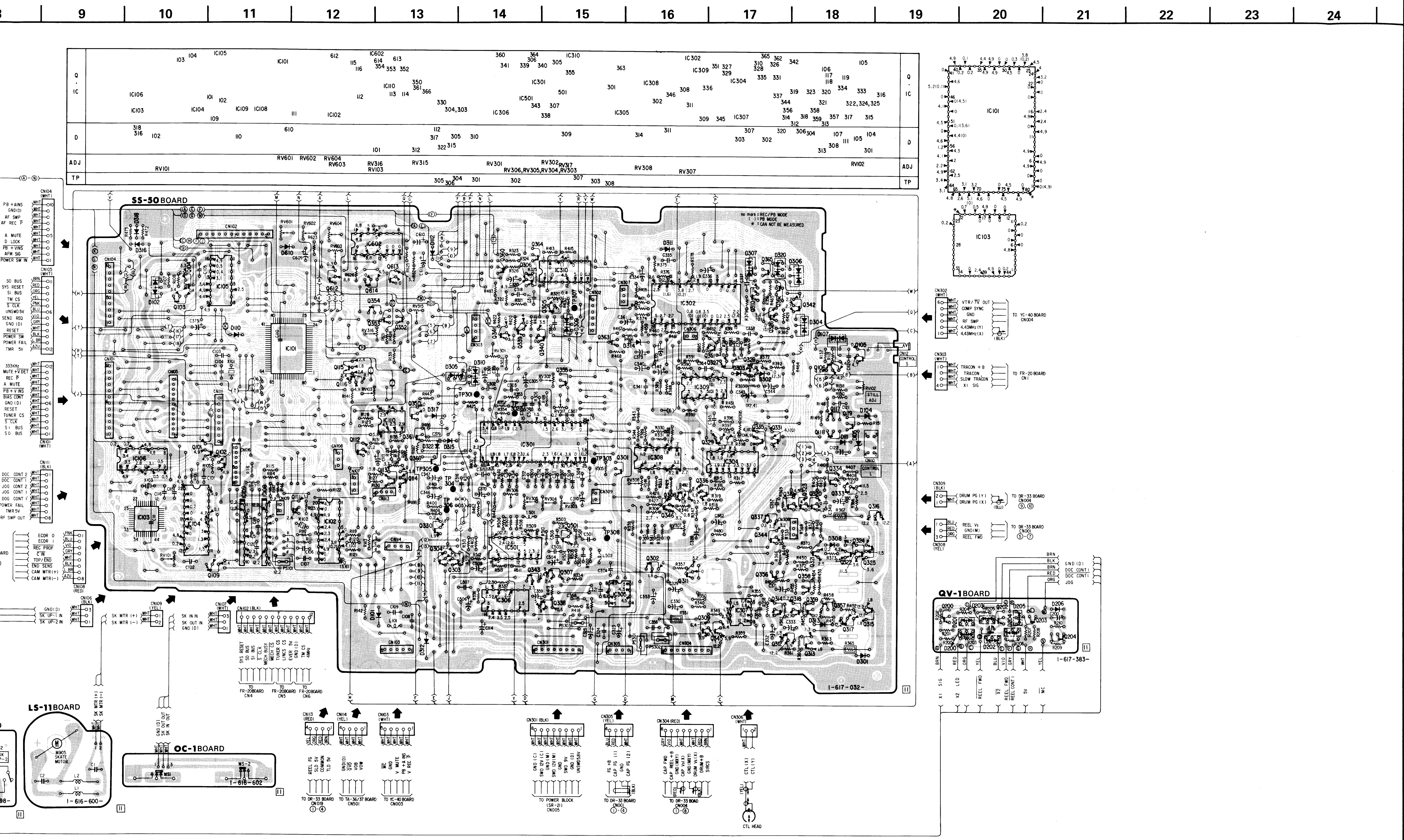

OC-1
SS-50
QV-1

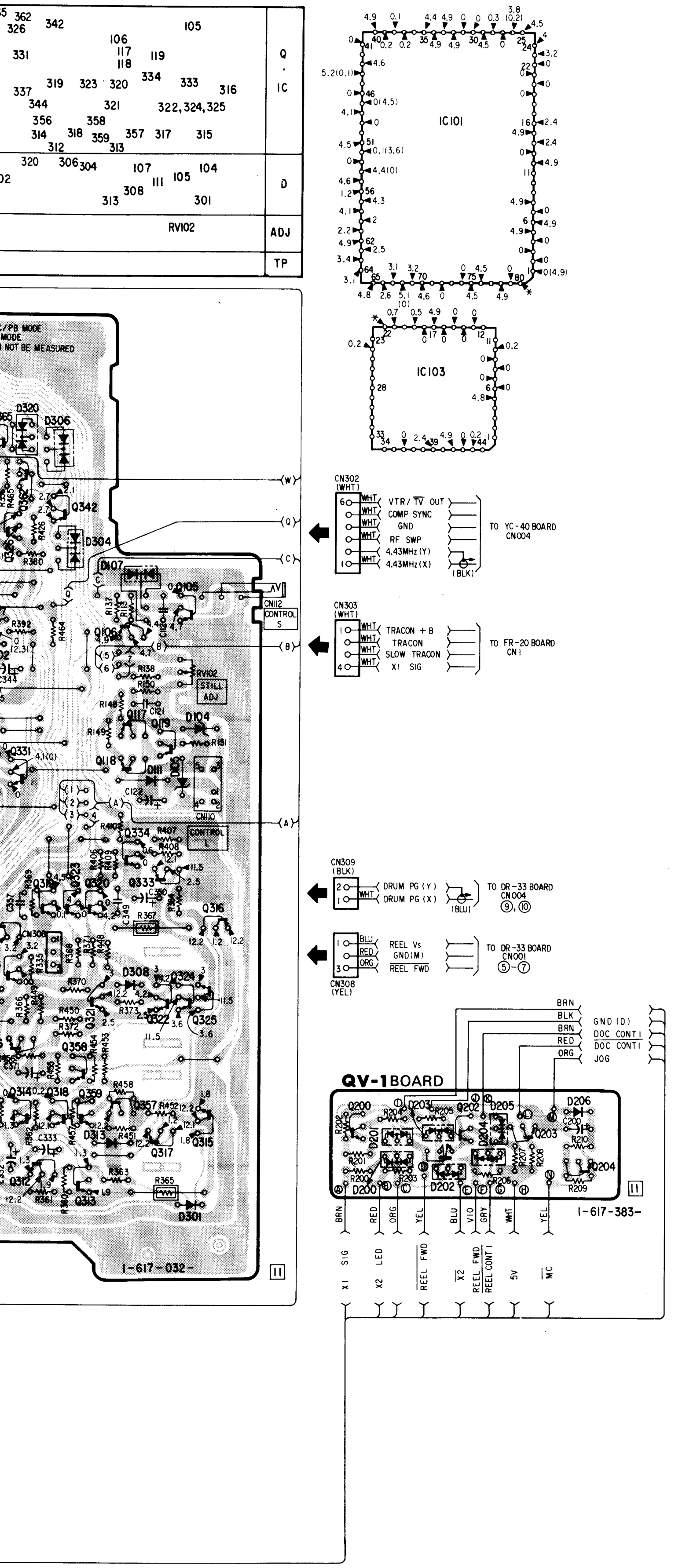


	10	11	12	13	14	15	16	
Q・IC	103 104 IC105 IC106 IC103 IC104	IC101 101 102 109 IC109 IC108	612 115 116 111 IC102 112	IC602 614 354 613 353 352 IC110 113 114 350 361 366 330 304,303	360 341 364 306 339 340 IC301 IC501 343 IC306	305 IC310 355 363 501 301 307 338 IC305	IC302 IC309 IC308 346 308 336 302 311 309	351 327 329 345
D	318 316 102	110 610		101 112 317 305 312 322 315	310	309	314 311	
ADJ	RV101	RV601	RV602 RV604 RV603	RV316 RV103 RV315	RV301 RV306,RV305,RV304,RV303	RV302 RV317	RV308 RV307	
TP				305 306 304	301 302	307 303 308		

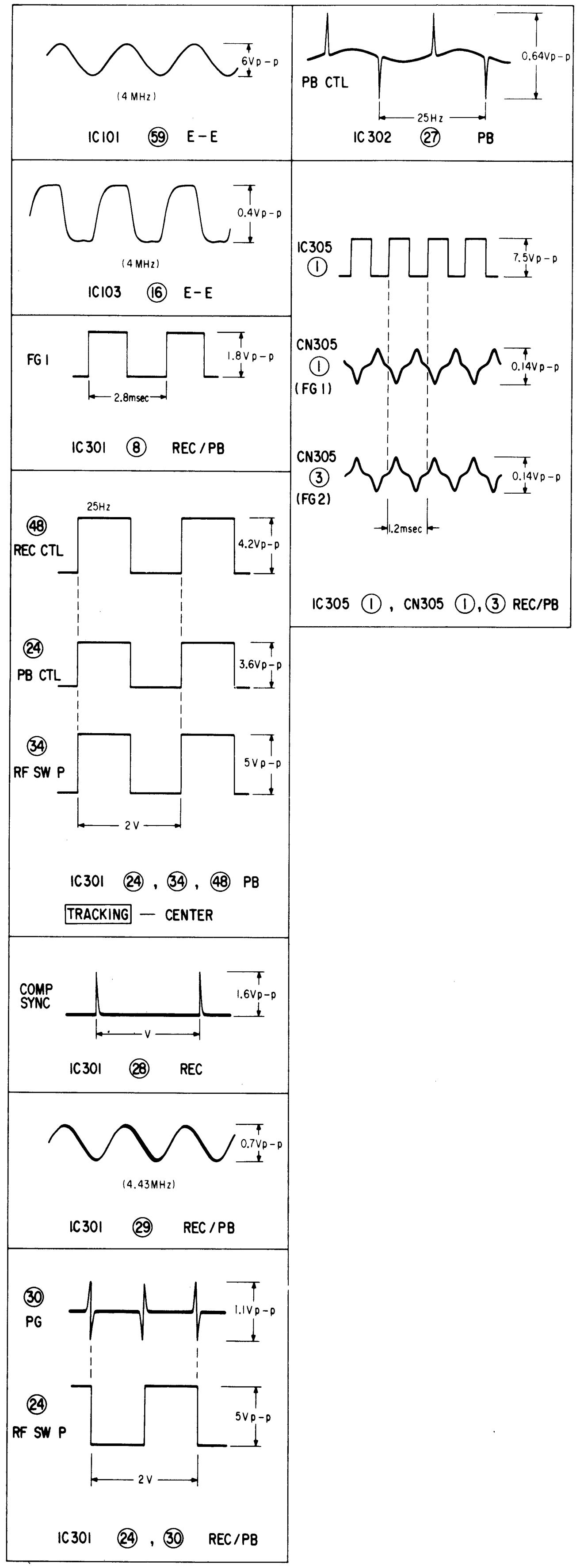

SS-50 BOARD
CN104 (WHT)
PB +AINS
GND(D)
AF SWP
AF REC P
A MUTE
D LOCK
PB + VINS
AFM SIG
POWER SW IN
TO AF-14 BOARD CN005
CN105 (WHT)
SO BUS
SYS RESET
SI BUS
TM CS
S CLK
UNSWD5V
SEND REQ
GND (D)
RESET
POWER SW
POWER FAIL
TMR 5V
TO DR-33 BOARD CN018
333KHz
MUTE+V DET
REC P
A MUTE
PB+V INS
BIAS CONT
GND (D)
RESET
TUNER CS
S CLK
SI BUS
SO BUS
CN101 (WHT)
TO TA-36/37 BOARD CN004
CN111 (BLK)
DOC CONT 2
DOC CONT 1
JOG CONT 2
JOG CONT 1
DOG CONT 1
POWER FAIL
TMR 5V
RF SWP OUT
TO TA-36/37 BOARD CN502
ECDR 0
ECDR 1
REC PROF
C IN
TOP/END
END SENS
CAM MTR(+)
CAM MTR(−)
CN108 (RED)
TO DR-33 BOARD CN019
CN106 (BLK)
GND(D)
SK UP-1 IN
SK UP-2 IN
CN109 (YEL)
SK MTR (+)
SK MTR (−)
CN107 (WHT)
SK IN IN
SK OUT IN
GND (D)
CN102 (BLK)
SYS RESET
SO BUS
SI BUS
S CLK
MECH BUSY
MECH CS
TUNER CS
EVER 5V
GND (D)
TM CS
4MHz
TO FR-20 BOARD CN4
TO FR-20BOARD CN5
TO FR-20BOARD CN6
US-1 BOARD
S1
S2
SK UP-1
SK UP-2
1-616-598-
LS-11 BOARD
M905 SKATE MOTOR
C1
C2
L1
L2
1-616-600-
OC-1 BOARD
MS1
MS-2
1-616-602
CN113 (RED)
REEL FG
TLD 5V
COMMON
TLD 5V
TO DR-33 BOARD CN019
CN114 (YEL)
TO TA-36/37 BOARD CN501
CN103 (WHT)
TO YC-40 BOARD CN003
CN301 (BLK)
TO POWER BLOCK (SR-21) CN005
CN305 (YEL)
TO DR-33 BOARD CN001
CN304 (RED)
TO DR-33 BOAD CN002
IC101
IC102
IC103
IC104
IC105
IC106
IC301
IC302
IC306
IC308
IC309
IC310
IC501
IC602
TP301
TP303
TP304
TP305
TP306
TP308

MC-Service


SS-50 BOARD
1-617-032-
QV-1 BOARD
1-617-383-
LS-11 BOARD
M905 SKATE MOTOR
1-616-600-
OC-1 BOARD
1-616-602
IC101
IC103
no mark : REC/PB MODE
( ) : PB MODE
* : CAN NOT BE MEASURED
TO YC-40 BOARD CN004
TO FR-20 BOARD CN1
TO DR-33 BOARD CN004
TO DR-33 BOARD CN001
TO DR-33 BOARD CN019
TO TA-36/37 BOARD CN501
TO YC-40 BOARD CN003
TO POWER BLOCK (SR-21) CN005
TO FR-20 BOARD CN4
TO FR-20 BOARD CN5
TO FR-20 BOARD CN6
CTL HEAD
STILL ADJ
CONTROL S
CONTROL L

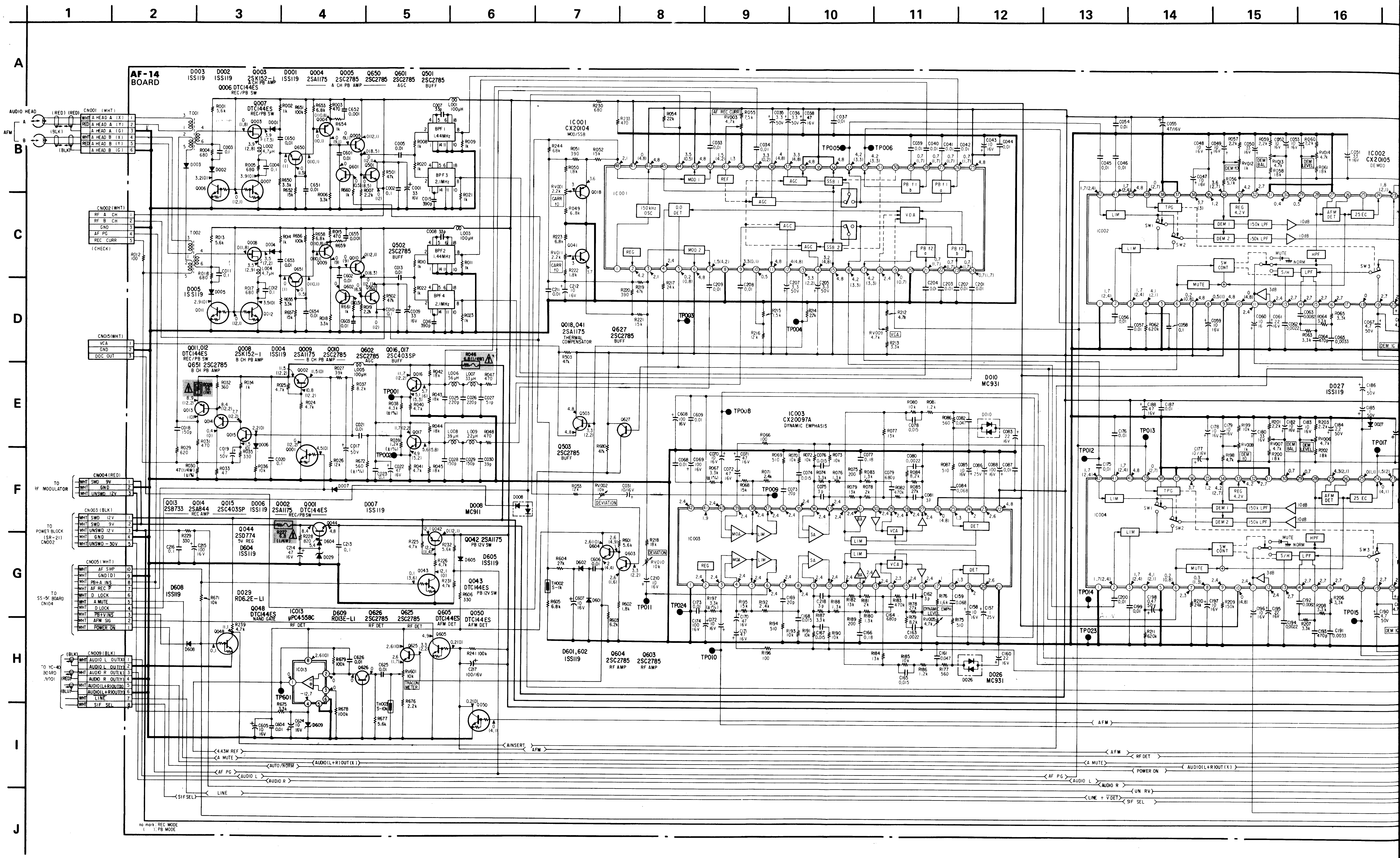

Q
IC
D
ADJ
TP
RV102
IC101
IC103
CN302 (WHT)
VTR/TV OUT
COMP SYNC
GND
RF SWP
4.43MHz (Y)
4.43MHz (X)
TO YC-40 BOARD CN004
CN303 (WHT)
TRACON +B
TRACON
SLOW TRACON
X1 SIG
TO FR-20 BOARD CN1
CN309 (BLK)
DRUM PG (Y)
DRUM PG (X)
TO DR-33 BOARD CN004 ⑨, ⑩
REEL Vs
GND (M)
REEL FWD
TO DR-33 BOARD CN001 ⑤-⑦
CN308 (YEL)
GND (D)
DOC CONT1
DOC CONT1
JOG
QV-1 BOARD
1-617-383-
1-617-032-
STILL ADJ
CONTROL S
CONTROL L
X1 SIG
X2 LED
REEL FWD
X2
REEL FWD
REEL CONT1
5V
MC

SS-50 BOARD


6Vp-p
(4MHz)
IC101 (59) E-E
PB CTL
0.64Vp-p
25Hz
IC302 ㉗ PB
0.4Vp-p
(4MHz)
IC103 ⑯ E-E
IC305 ①
7.5Vp-p
FG1
1.8Vp-p
2.8msec
IC301 ⑧ REC/PB
CN305 ① (FG1)
0.14Vp-p
CN305 ③ (FG2)
0.14Vp-p
1.2msec
IC305 ①, CN305 ①,③ REC/PB
25Hz
㊽ REC CTL
4.2Vp-p
㉔ PB CTL
3.6Vp-p
㉞ RF SW P
5Vp-p
2V
IC301 ㉔, ㉞, ㊽ PB
TRACKING — CENTER
COMP SYNC
1.6Vp-p
V
IC301 ㉘ REC
0.7Vp-p
(4.43MHz)
IC301 ㉙ REC/PB
㉚ PG
1.1Vp-p
㉔ RF SW P
5Vp-p
2V
IC301 ㉔, ㉚ REC/PB

4-6. AF-14 (AFM SIGNAL PROCESS), PJ-3 (AUDIO IN/OUT JACKS), FL-8 (INDICATOR), DH-4 (A/V HEAD AMP), PW-15 (POWER SWITCH, HEADPHONE LEVEL), DR-33 (SYSTEM CONTROL, SIGNAL TRANSLATION), MC-10 (MICROPHONE JACK), HP-18 (

– Ref. No. AF-14 BOARD: 3,000 series, PJ-3 BOARD: 9,500 series, FL-8 BOARD: 9,600 series, DH-4 BOARD: 7,000 series, PW-15 BOARD: 12,000 series, DR-33 BOARD: 9,300 series, MC-10 BOARD: 13,000 series, HP-18 BOARD: 9,800 series –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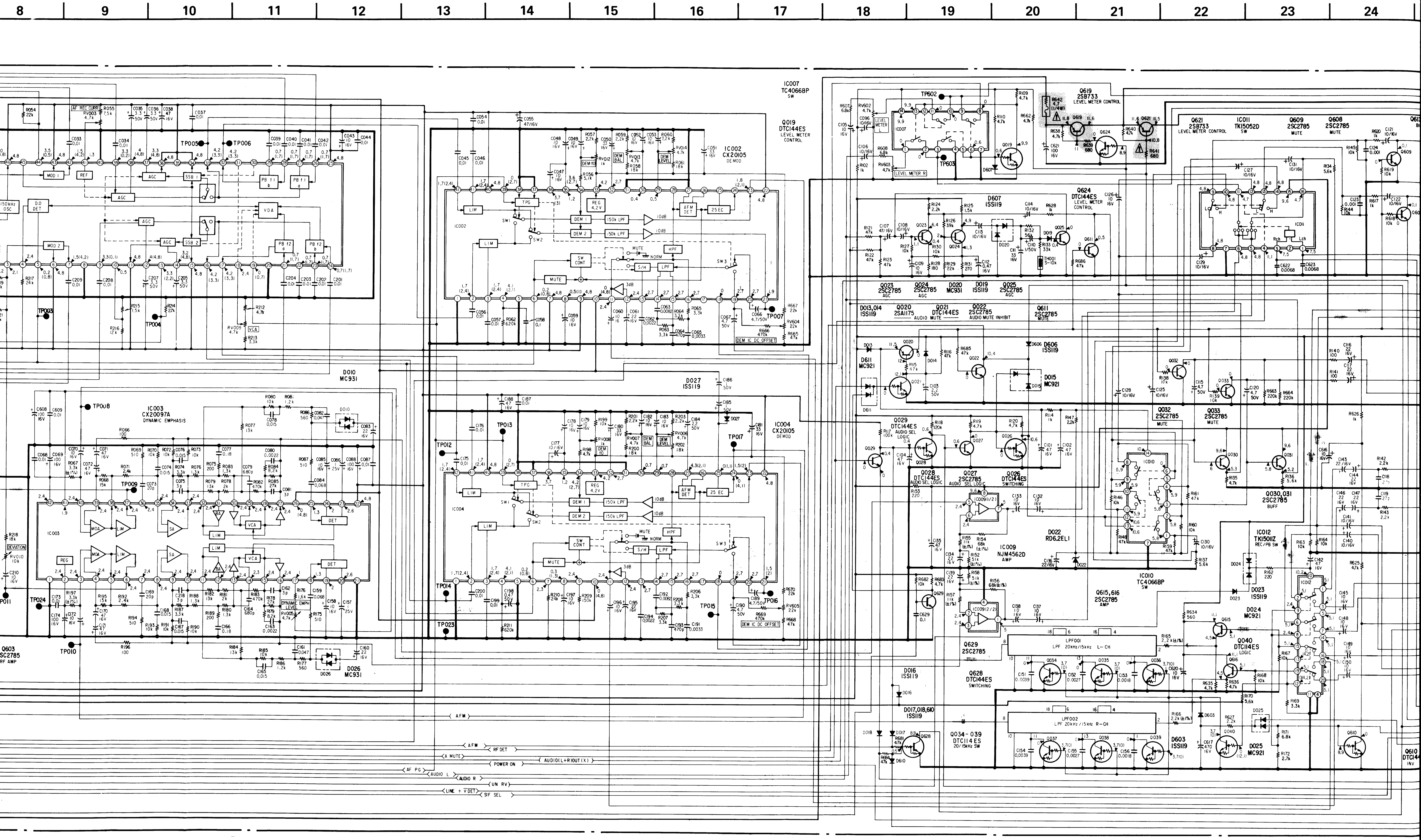
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
AF-14 BOARD
AUDIO HEAD
AFM
CN001 (WHT)
CN002 (WHT)
(CHECK)
CN015 (WHT)
CN004 (RED)
TO RF MODULATOR
CN003 (BLK)
TO POWER BLOCK (SR-21) CN002
CN005 (WHT)
TO SS-5F BOARD CN104
CN009 (BLK)
TO YC-40 BOARD JV901
IC001 CX20104 MOD/SSB
IC002 CX20105 DEMOD
IC003 CX20097A DYNAMIC EMPHASIS
IC004
IC013 μPC4558C
Q006 DTC144ES REC/PB SW
Q007 DTC144ES REC/PB SW
Q502 2SC2785 BUFF
Q018,041 2SA1175 THERMAL COMPENSATOR
Q627 2SC2785 BUFF
Q503 2SC2785 BUFF
D010 MC931
D027 1SS119
D026 MC931
D008 MC911
Q042 2SA1175 PB 12V SW
Q043 DTC144ES PB 12V SW
D605 1SS119
D601,602 1SS119
Q604 2SC2785 RF AMP
Q603 2SC2785 RF AMP
D608 1SS119
D029 RD6.2E-L1
Q048 DTC144ES NAND GATE
Q050 DTC144ES AFM DET
TP001
TP002
TP003
TP004
TP005
TP006
TP008
TP009
TP010
TP011
TP012
TP013
TP014
TP015
TP017
TP023
TP024
TP601
no mark : REC MODE
( ) : PB MODE

PW-15 (POWER SWITCH, HEADPHONE LEVEL), DR-33 (SYSTEM CONTROL, SIGNAL TRANSLATION), MC-10 (MICROPHONE JACK), HP-18 (HEADPHONE JACK) SCHEMATIC DIAGRAMS

D: 12,000 series, DR-33 BOARD: 9,300 series, MC-10 BOARD: 13,000 series, HP-18 BOARD: 9,800 series –


8
9
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12
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14
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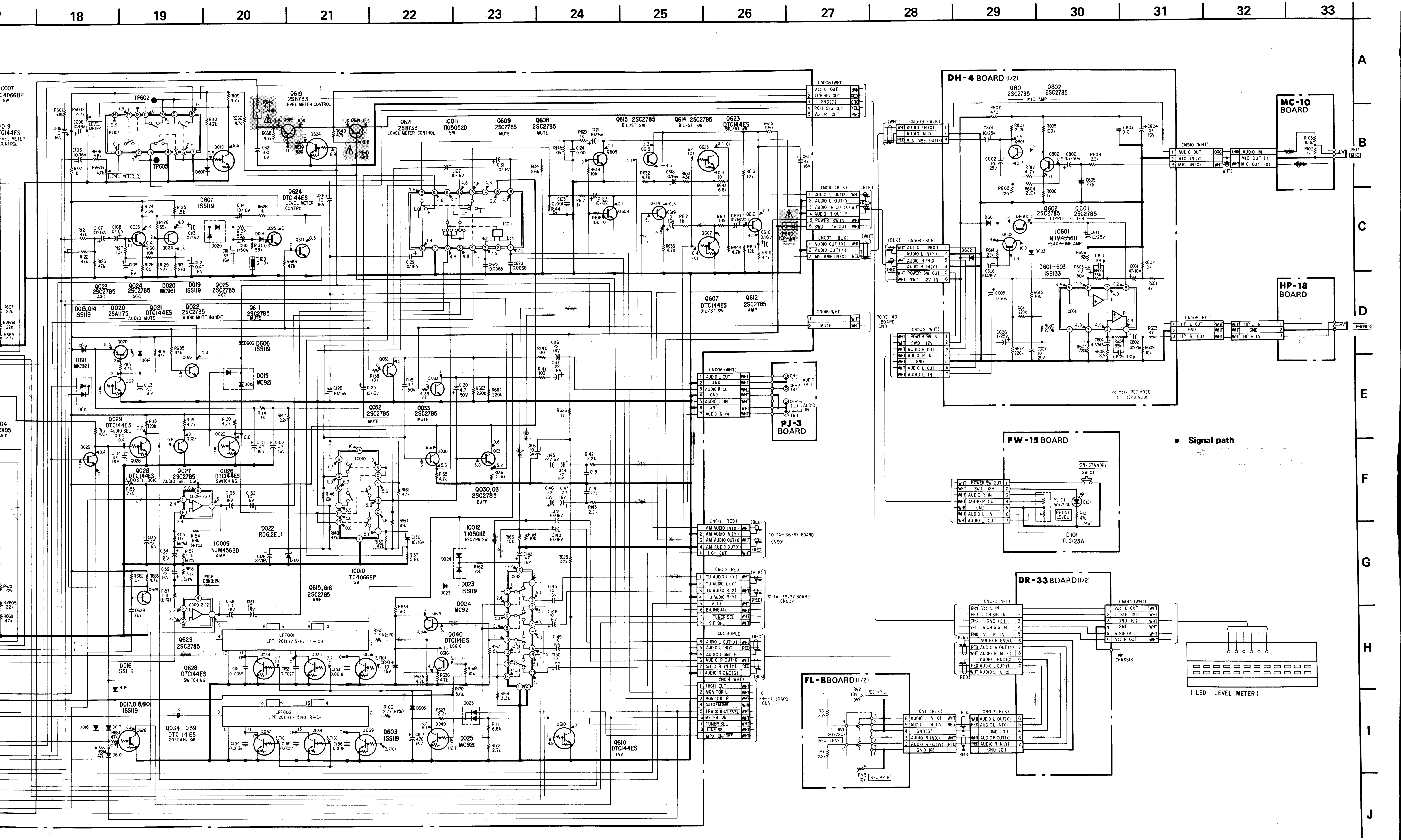
17
18
19
20
21
22
23
24
IC003 CX20097A DYNAMIC EMPHASIS
IC002 CX20105 DEMOD
IC004 CX20105 DEMOD
IC007 TC4066BP SW
Q019 DTC144ES LEVEL METER CONTROL
Q619 2SB733 LEVEL METER CONTROL
Q621 2SB733 LEVEL METER CONTROL
IC011 TK15052D SW
Q609 2SC2785 MUTE
Q608 2SC2785 MUTE
Q624 DTC144ES LEVEL METER CONTROL
D607 1SS119
Q023 2SC2785 AGC
Q024 2SC2785 AGC
D020 MC931
D019 1SS119
Q025 2SC2785 AGC
D013,014 1SS119
Q020 2SA1175 AUDIO MUTE
Q021 DTC144ES AUDIO MUTE
Q022 2SC2785 AUDIO MUTE INHIBIT
Q611 2SC2785 MUTE
D606 1SS119
D015 MC921
D011 MC921
D010 MC931
D027 1SS119
Q032 2SC2785 MUTE
Q033 2SC2785 MUTE
Q029 DTC144ES AUDIO SEL LOGIC
Q028 DTC144ES AUDIO SEL LOGIC
Q027 2SC2785 AUDIO SEL LOGIC
Q026 DTC144ES SWITCHING
IC010 TC4066BP SW
Q030,031 2SC2785 BUFF
IC012 TK15011Z REC/PB SW
D022 RD6.2EL1
IC009 NJM4562D AMP
Q615,616 2SC2785 AMP
D023 1SS119
D024 MC921
Q040 DTC114ES LOGIC
Q629 2SC2785
Q628 DTC144ES SWITCHING
D016 1SS119
LPF001 LPF 20kHz/15kHz L-CH
LPF002 LPF 20kHz/15kHz R-CH
D017,018,610 1SS119
Q034-039 DTC114ES 20/15kHz SW
D603 1SS119
D025 MC921
Q610 DTC144
Q603 2SC2785 RF AMP
D026 MC931
TP003
TP004
TP005
TP006
TP007
TP008
TP009
TP010
TP011
TP012
TP013
TP014
TP015
TP016
TP017
TP023
TP024
TP602
TP603
DEM IC DC OFFSET
DYNAMIC EMPH LEVEL
DEVIATION
AF REC CURR
LEVEL METER
AFM
A MUTE
RF DET
POWER ON
AUDIO (L+R) OUT (X)
AF PG
AUDIO L
AUDIO R
UN RV
LINE + V DET
SF SEL


DH-4 BOARD (1/2)
MC-10 BOARD
HP-18 BOARD
PJ-3 BOARD
PW-15 BOARD
DR-33 BOARD (1/2)
FL-8 BOARD (1/2)
IC011 TK15052D SW
IC010 TC4066BP SW
IC009 NJM4562D AMP
IC012 TK15011Z REC/PB SW
IC601 NJM4556D HEADPHONE AMP
LPF001 LPF 20kHz/15kHz L-CH
LPF002 LPF 20kHz/15kHz R-CH
Q619 2SB733 LEVEL METER CONTROL
Q621 2SB733 LEVEL METER CONTROL
Q801 2SC2785 Q802 2SC2785 MIC AMP
Q602 2SC2785 Q601 2SC2785 LIPPLE FILTER
TO YC-40 BOARD CN011
TO TA-36/37 BOARD CN901
TO TA-36/37 BOARD CN002
TO FR-20 BOARD CN3
PHONES
MIC
D101 TLG123A
(LED LEVEL METER)
Signal path
A
B
C
D
E
F
G
H
I
J
18
19
20
21
22
23
24
25
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27
28
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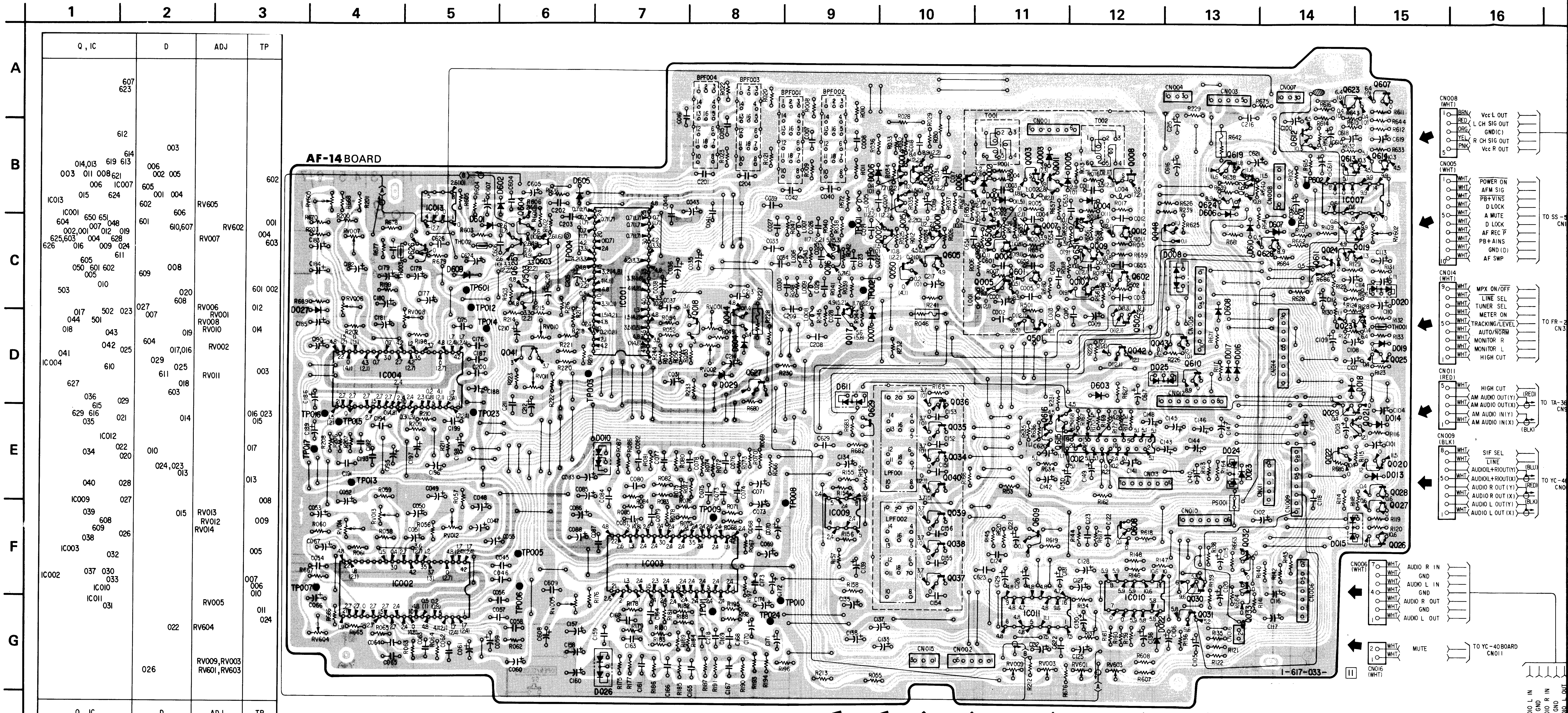
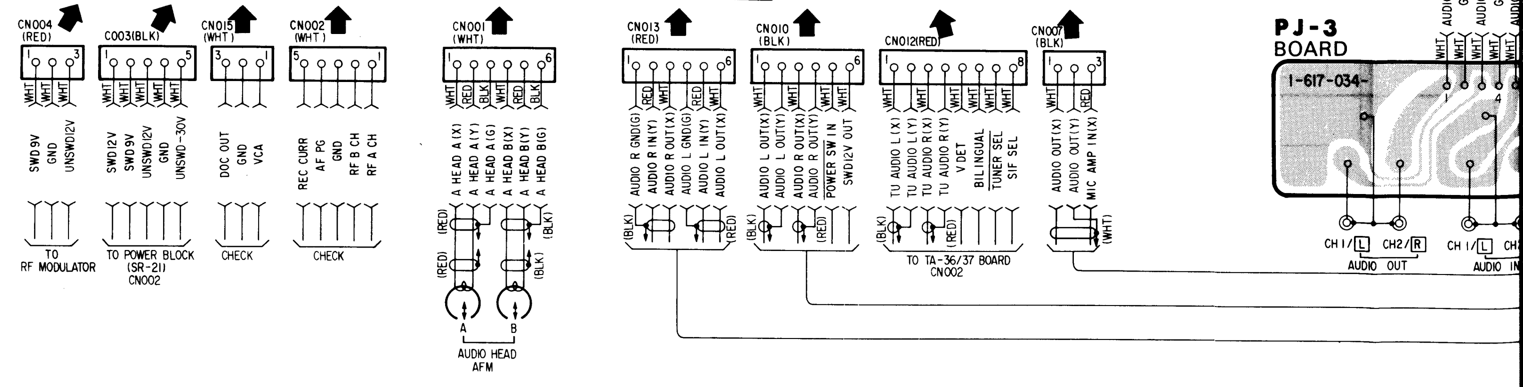
33

AF-14 (AFM SIGNAL PROCESS), PJ-3 (AUDIO IN/OUT JACKS), FL-8 (INDICATOR), DH-4 (A/V HEAD AMP), PW-15 (POWER SWITCH, HEADPHONE LEVEL), DR-33 (SYSTEM CONTROL, SIGNAL TRANSLATION), MC-10 (MICROPHONE JACK), HP-18 (HEAD

– Ref. No. AF-14 BOARD: 3,000 series, PJ-3 BOARD: 9,500 series, FL-8 BOARD: 9,600 series, DH-4 BOARD: 7,000 series, PW-15 BOARD: 12,000 series, DR-33 BOARD: 9,300 series, MC-10 BOARD: 13,000 series, HP-18 BOARD: 9,800 series –



AF-14 BOARD
Q , IC
D
ADJ
TP
1-617-033-
CN008 (WHT)
Vcc L OUT
L CH SIG OUT
GND(C)
R CH SIG OUT
Vcc R OUT
CN005 (WHT)
POWER ON
AFM SIG
PB+VINS
D LOCK
A MUTE
D LOCK
AF REC P
PB+AINS
GND (D)
AF SWP
TO SS-
CN014 (WHT)
MPX ON/OFF
LINE SEL
TUNER SEL
METER ON
TRACKING/LEVEL
AUTO/NORM
MONITOR R
MONITOR L
HIGH CUT
TO FR-
CN011 (RED)
HIGH CUT
AM AUDIO OUT(Y)
AM AUDIO OUT(X)
AM AUDIO IN(Y)
AM AUDIO IN(X)
TO TA-
CN009 (BLK)
SIF SEL
LINE
AUDIO(L+R)OUT(Y)
AUDIO(L+R)OUT(X)
AUDIO R OUT (Y)
AUDIO R OUT (X)
AUDIO L OUT(Y)
AUDIO L OUT (X)
TO YC-
CN006 (WHT)
AUDIO R IN
GND
AUDIO L IN
GND
AUDIO R OUT
GND
AUDIO L OUT
MUTE
TO YC-40 BOARD CN011
CN016 (WHT)



CN004 (RED)
SW9V
GND
UNSW12V
TO RF MODULATOR
CN003 (BLK)
SW12V
SW9V
UNSW12V
GND
UNSW0-30V
TO POWER BLOCK (SR-21) CN002
CN015 (WHT)
DOC OUT
GND
VCA
CHECK
CN002 (WHT)
REC CURR
AF PG
GND
RF B CH
RF A CH
CHECK
CN001 (WHT)
A HEAD A(X)
A HEAD A(Y)
A HEAD A(G)
A HEAD B(X)
A HEAD B(Y)
A HEAD B(G)
AUDIO HEAD AFM
CN013 (RED)
AUDIO R GND(G)
AUDIO R IN(Y)
AUDIO L GND(G)
AUDIO L IN(Y)
AUDIO L OUT(X)
CN010 (BLK)
AUDIO L OUT(X)
AUDIO L OUT(Y)
AUDIO R OUT(X)
AUDIO R OUT(Y)
POWER SW IN
SW12V OUT
CN012 (RED)
TU AUDIO L(X)
TU AUDIO L(Y)
TU AUDIO R(X)
TU AUDIO R(Y)
V-DET
BILINGUAL
TUNER SEL
SIF SEL
TO TA-36/37 BOARD CN002
CN007 (BLK)
AUDIO OUT(X)
AUDIO OUT(Y)
MIC AMP IN(X)
PJ-3 BOARD
1-617-034-
CH 1/L
CH 2/R
AUDIO OUT
AUDIO IN

Note on Schematic Diagram:

- All resistors are in ohms, $^1/_6$W unless otherwise noted. kΩ: 1000 Ω, MΩ: 1000 kΩ
- All capacitors are in μF unless otherwise noted. p: μμF 50WV or less are not indicated except for electrolytics.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : nonflammable resistor.
- : fusible resistor.
- The red lines show the main voltages.
- All voltages are dc measured with a VOM (10 MΩ).
- ▬ : B+ bus.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

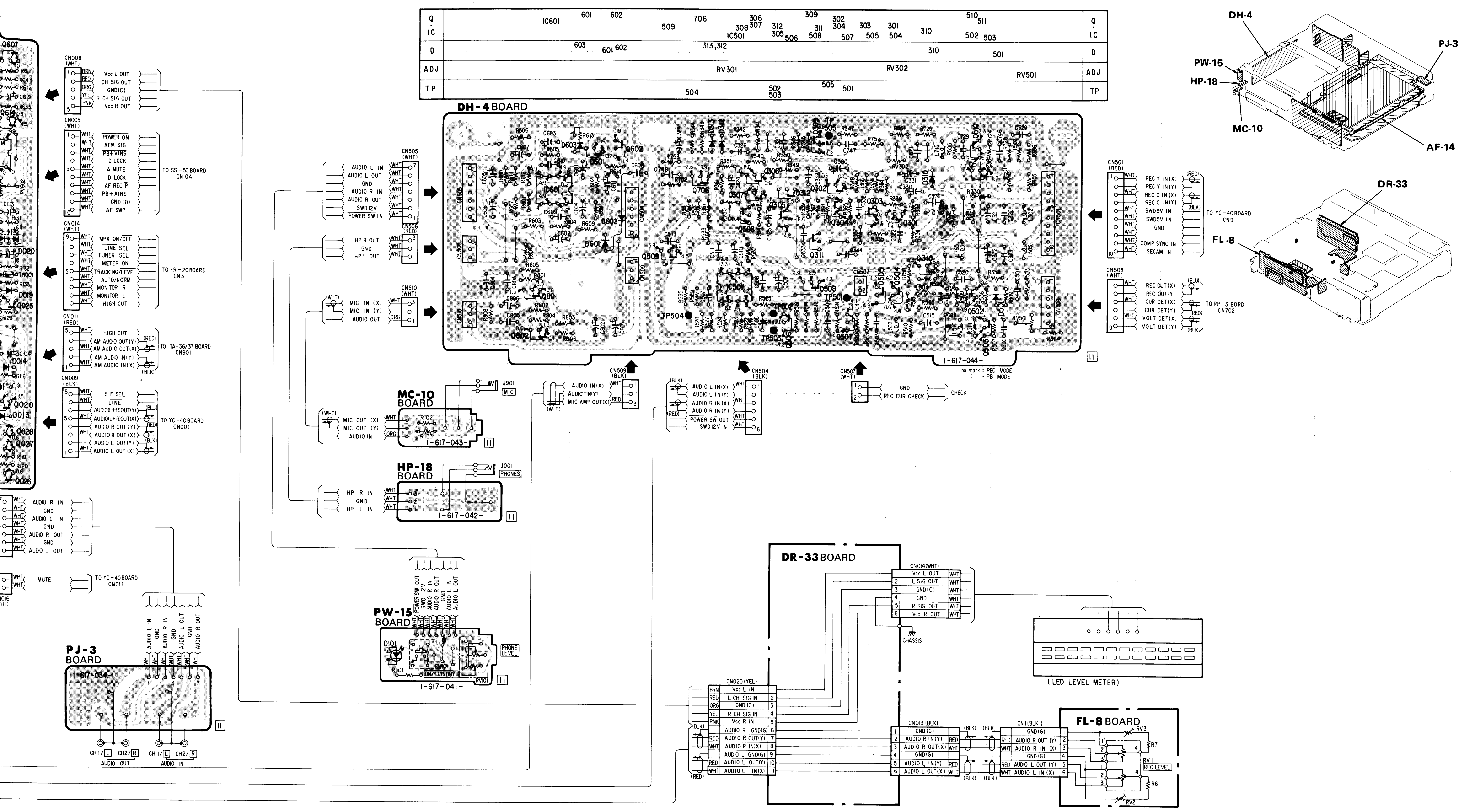
Note on Printed Wiring Board:

- ○— : Indicates a leadwire mounted on the component side.
- ●— : Indicates a leadwire mounted on the printed side.
- ▨ : soldering side.
- ▨ : B+ pattern
- Digital transistor (AF-14: Q001, 006, 007, 011, 012, 019, 021, 026, 028, 029, 034, 035, 036, 037, 038, 039, 040, 043, 048, 050, 605, 607, 610, 623, 624, 628) transistors with resistors.

  Refer to the AF-14 board schematic diagram for digital transistor.

When indicating parts by reference number, please include the board name.

	20	21	22	23	24	25	26
Q·IC		IC601 601	602 509 706	306 307 308 IC501 312 305 506	309 311 508 302 304 507 303 505	301 504 310 510 502	511 503
D		603 601	602	313,312		310	501
ADJ				RV301		RV302	RV501
TP			504	502 503	505 501		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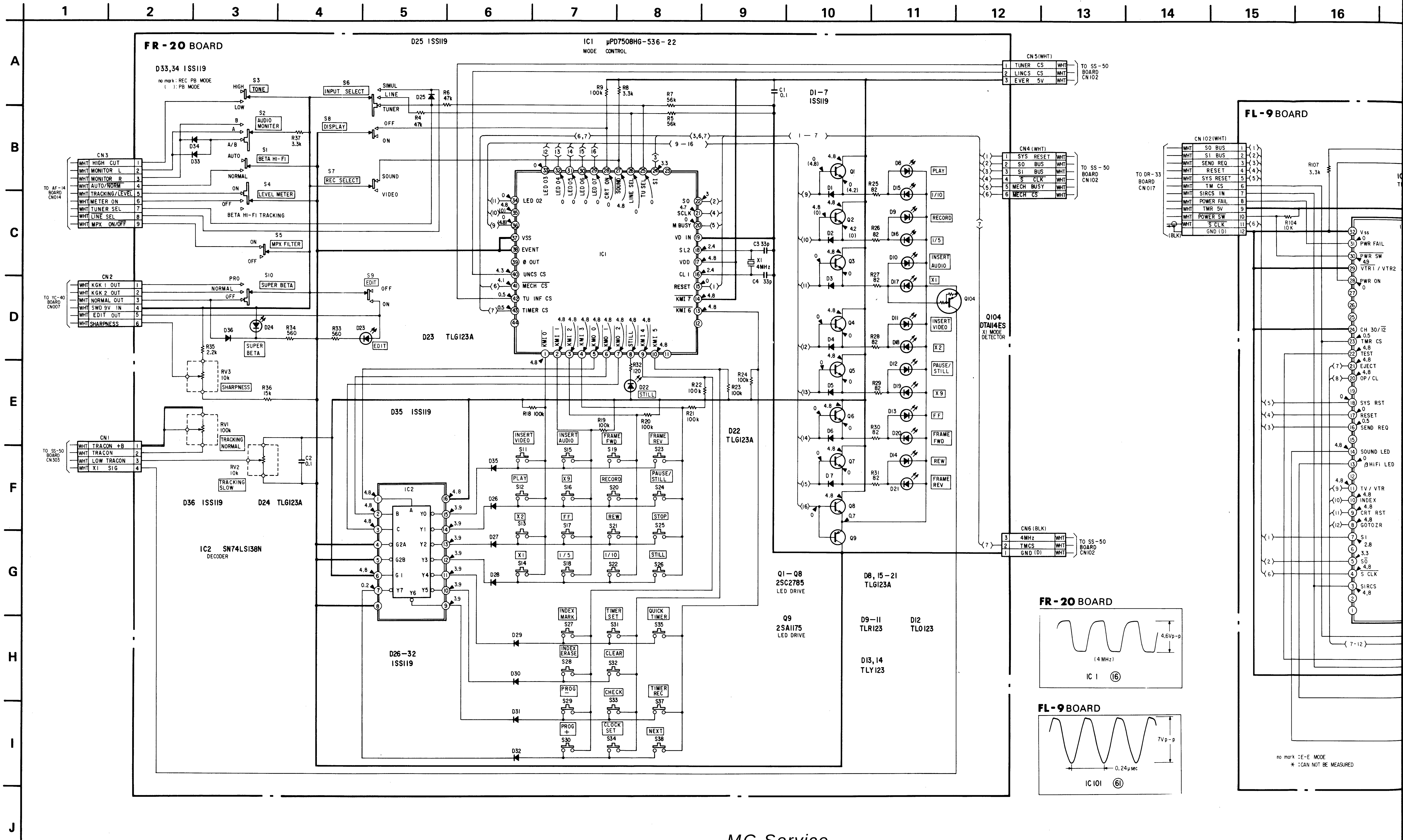
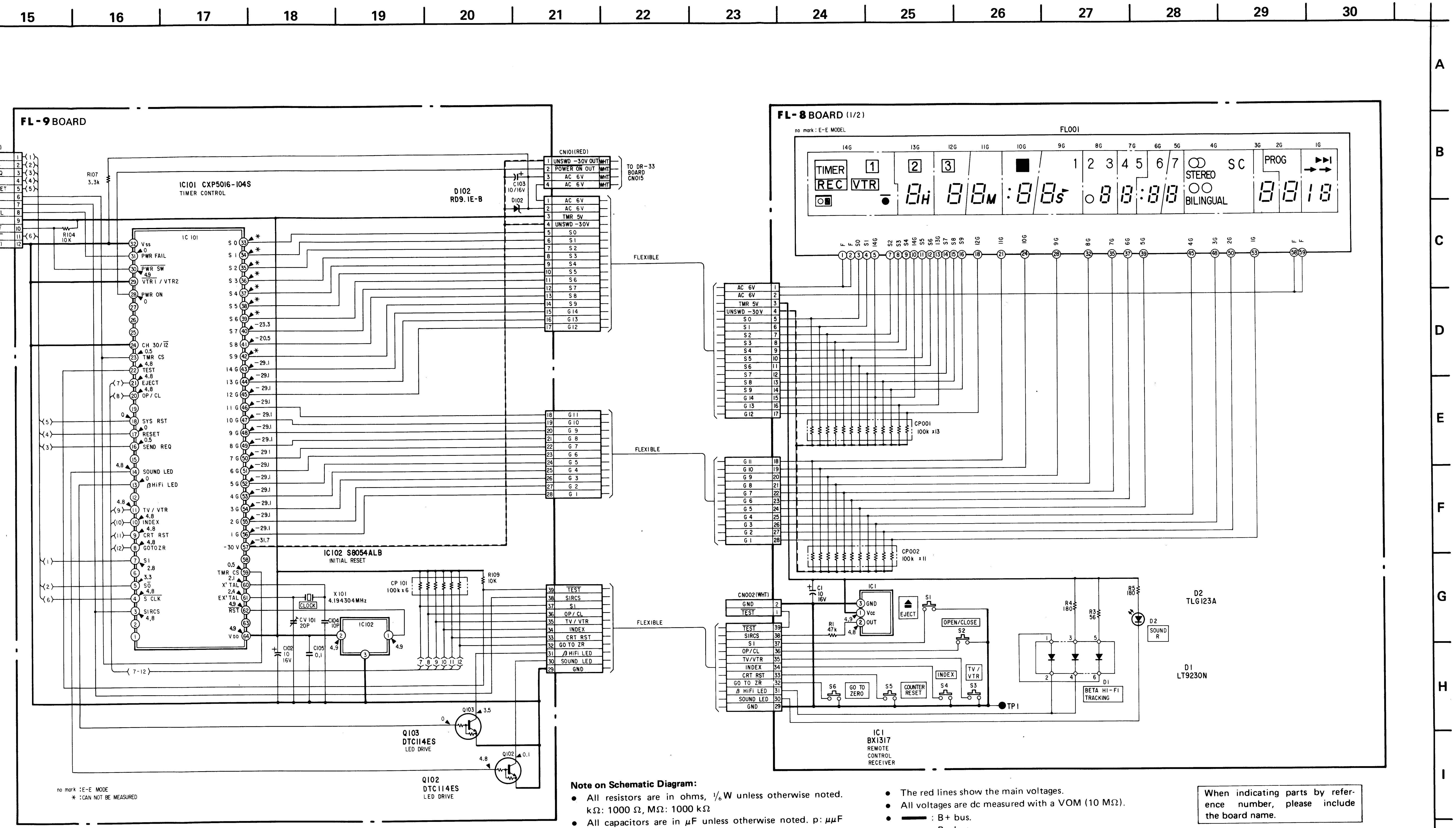
27
28
29
30
A
B
C
D
E
F
G
H
I
J
DH-4 BOARD
1-617-044-
no mark : REC MODE
( ) : PB MODE
CN008 (WHT)
BRN Vcc L OUT
RED L CH SIG OUT
ORG GND(C)
YEL R CH SIG OUT
PNK Vcc R OUT
CN005 (WHT)
POWER ON
AFM SIG
PB+VINS
D LOCK
A MUTE
D LOCK
AF REC P
PB+AINS
GND (D)
AF SWP
TO SS-50 BOARD CN104
CN014 (WHT)
MPX ON/OFF
LINE SEL
TUNER SEL
METER ON
TRACKING/LEVEL
AUTO/NORM
MONITOR R
MONITOR L
HIGH CUT
TO FR-20 BOARD CN3
CN011 (RED)
HIGH CUT
AM AUDIO OUT(Y)
AM AUDIO OUT(X)
AM AUDIO IN(Y)
AM AUDIO IN(X)
TO TA-36/37 BOARD CN901
CN009 (BLK)
SIF SEL
LINE
AUDIO(L+R)OUT(Y)
AUDIO(L+R)OUT(X)
AUDIO R OUT (Y)
AUDIO R OUT (X)
AUDIO L OUT(Y)
AUDIO L OUT (X)
TO YC-40 BOARD CN001
AUDIO R IN
GND
AUDIO L IN
GND
AUDIO R OUT
GND
AUDIO L OUT
MUTE
TO YC-40 BOARD CN011
CN505 (WHT)
AUDIO L IN
AUDIO L OUT
GND
AUDIO R IN
AUDIO R OUT
SWD12V
POWER SW IN
CN506 (RED)
HP R OUT
GND
HP L OUT
CN510 (WHT)
MIC IN (X)
MIC IN (Y)
AUDIO OUT
CN509 (BLK)
AUDIO IN(X)
AUDIO IN(Y)
MIC AMP OUT(X)
CN504 (BLK)
AUDIO L IN(X)
AUDIO L IN(Y)
AUDIO R IN(X)
AUDIO R IN(Y)
POWER SW OUT
SWD12V IN
CN507 (WHT)
GND
REC CUR CHECK
CHECK
CN501 (RED)
REC Y IN(X)
REC Y IN(Y)
REC C IN(X)
REC C IN(Y)
SWD9V IN
SWD5V IN
GND
COMP SYNC IN
SECAM IN
TO YC-40 BOARD CN9
CN508 (WHT)
REC OUT(X)
REC OUT(Y)
CUR DET(X)
CUR DET(Y)
VOLT DET(X)
VOLT DET(Y)
TO RP-318 ORD CN702
TP504
TP503
TP502
TP501
TP505
MC-10 BOARD
MIC OUT (X)
MIC OUT (Y)
AUDIO IN
J901
MIC
1-617-043-
HP-18 BOARD
HP R IN
GND
HP L IN
J001
PHONES
1-617-042-
PW-15 BOARD
POWER SW OUT
SWD 12V
AUDIO R IN
AUDIO R OUT
GND
AUDIO L IN
AUDIO L OUT
D101
R101
SW101
ON/STANDBY
RV101
PHONE LEVEL
1-617-041-
PJ-3 BOARD
AUDIO L IN
GND
AUDIO R IN
GND
AUDIO L OUT
GND
AUDIO R OUT
1-617-034-
CH1/L CH2/R
AUDIO OUT
CH1/L CH2/R
AUDIO IN
DR-33 BOARD
CN014 (WHT)
Vcc L OUT
L SIG OUT
GND (C)
GND
R SIG OUT
Vcc R OUT
CHASSIS
CN020 (YEL)
BRN Vcc L IN
RED L CH SIG IN
ORG GND (C)
YEL R CH SIG IN
PNK Vcc R IN
AUDIO R GND(G)
RED AUDIO R OUT(Y)
WHT AUDIO R IN(X)
AUDIO L GND(G)
RED AUDIO L OUT(Y)
WHT AUDIO L IN(X)
CN013 (BLK)
GND (G)
AUDIO R IN(Y)
AUDIO R OUT(X)
GND (G)
AUDIO L IN(Y)
AUDIO L OUT(X)
CN1 (BLK)
GND (G)
AUDIO R OUT (Y)
AUDIO R IN (X)
GND (G)
AUDIO L OUT (Y)
AUDIO L IN (X)
FL-8 BOARD
RV3
R7
RV1
REC LEVEL
R6
RV2
(LED LEVEL METER)
DH-4
PJ-3
PW-15
HP-18
MC-10
AF-14
DR-33
FL-8

4-7. FL-8 (INDICATOR), FL-9 (TIMER CONTROL), FR-20 (FUNCTION SWITCH) SCHEMATIC DIAGRAMS

– Ref. No. FL-8 BOARD: 9,600 series, FL-9 BOARD: 9,700 series, FR-20 BOARD: 9,800 series –


FR-20 BOARD
D33,34 1SS119
no mark : REC PB MODE
( ) : PB MODE
D25 1SS119
IC1 μPD7508HG-536-22
MODE CONTROL
S3 TONE
HIGH
LOW
S2 AUDIO MONITER
S1 BETA HI-FI
S4 LEVEL METER
BETA HI-FI TRACKING
S5 MPX FILTER
S6 INPUT SELECT
SIMUL
LINE
TUNER
S8 DISPLAY
S7 REC SELECT
SOUND
VIDEO
S10 SUPER BETA
PRO
NORMAL
S9 EDIT
CN3
HIGH CUT
MONITOR L
MONITOR R
AUTO/NORM
TRACKING/LEVEL
METER ON
TUNER SEL
LINE SEL
MPX ON/OFF
TO AF-14 BOARD CN014
CN2
KGK 1 OUT
KGK 2 OUT
NORMAL OUT
SWD 9V IN
EDIT OUT
SHARPNESS
TO YC-40 BOARD CN007
CN1
TRACON +B
TRACON
LOW TRACON
X1 SIG
TO SS-50 BOARD CN303
RV3 10k SHARPNESS
RV1 100k TRACKING NORMAL
RV2 10k TRACKING SLOW
D36 1SS119
D24 TLG123A
D23 TLG123A
SUPER BETA
EDIT
D35 1SS119
IC2 SN74LS138N DECODER
IC2
D26-32 1SS119
D22 TLG123A
STILL
INSERT VIDEO S11
INSERT AUDIO S15
FRAME FWD S19
FRAME REV S23
PLAY S12
X9 S16
RECORD S20
PAUSE/STILL S24
X2 S13
FF S17
REW S21
STOP S25
X1 S14
1/5 S18
1/10 S22
STILL S26
INDEX MARK S27
TIMER SET S31
QUICK TIMER S35
INDEX ERASE S28
CLEAR S32
PROG − S29
CHECK S33
TIMER REC S37
PROG + S30
CLOCK SET S34
NEXT S38
D1-7 1SS119
CN5 (WHT)
TUNER CS
LINCS CS
EVER 5V
TO SS-50 BOARD CN102
CN4 (WHT)
SYS RESET
SO BUS
SI BUS
S CLK
MECH BUSY
MECH CS
CN6 (BLK)
4MHz
TMCS
GND (D)
Q104 DTA114ES X1 MODE DETECTOR
PLAY
1/10
RECORD
1/5
INSERT AUDIO
X1
INSERT VIDEO
X2
PAUSE/STILL
X9
FF
FRAME FWD
REW
FRAME REV
Q1-Q8 2SC2785 LED DRIVE
Q9 2SA1175 LED DRIVE
D8, 15-21 TLG123A
D9-11 TLR123
D12 TLO123
D13, 14 TLY123
X1 4MHz
FL-9 BOARD
CN102 (WHT)
SO BUS
SI BUS
SEND REQ
RESET
SYS RESET
TM CS
SIRCS IN
POWER FAIL
TMR 5V
POWER SW
S CLK
GND (D)
TO DR-33 BOARD CN017
FR-20 BOARD
4.6Vp-p
(4MHz)
IC1 ⑯
FL-9 BOARD
7Vp-p
0.24μsec
IC101 ⑥1
no mark : E-E MODE
* : CAN NOT BE MEASURED


15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
A
B
C
D
E
F
G
H
I
J
FL-9 BOARD
IC101 CXP5016-104S
TIMER CONTROL
D102
RD9.1E-B
CN101(RED)
UNSWD -30V OUT
POWER ON OUT
AC 6V
TMR 5V
TO DR-33 BOARD CN015
C103 10/16V
R107 3.3k
R104 10K
IC102 S8054ALB
INITIAL RESET
X101 4.194304MHz
CP101 100k x 6
R109 10K
CLOCK
CV101 20P
C104 10P
C102 10 16V
C105 0.1
Q103
DTC114ES
LED DRIVE
Q102
DTC114ES
LED DRIVE
FLEXIBLE
FL-8 BOARD (1/2)
no mark : E-E MODEL
FL001
TIMER
REC
VTR
STEREO
BILINGUAL
PROG
SC
CP001 100k x13
CP002 100k x11
CN002(WHT)
IC1
EJECT
OPEN/CLOSE
GO TO ZERO
COUNTER RESET
INDEX
TV/VTR
TP1
R1 47k
C1 10 16V
R4 180
R3 56
R5 180
D2 TLG123A
SOUND R
D1 LT9230N
BETA HI-FI TRACKING
IC1
BX1317
REMOTE CONTROL RECEIVER
no mark :E-E MODE
* :CAN NOT BE MEASURED

Note on Schematic Diagram:

- All resistors are in ohms, $^1/_6$W unless otherwise noted. kΩ: 1000 Ω, MΩ: 1000 kΩ
- All capacitors are in μF unless otherwise noted. p: μμF 50WV or less are not indicated except for electrolytics.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ▭ : nonflammable resistor.
- ∿ : fusible resistor.

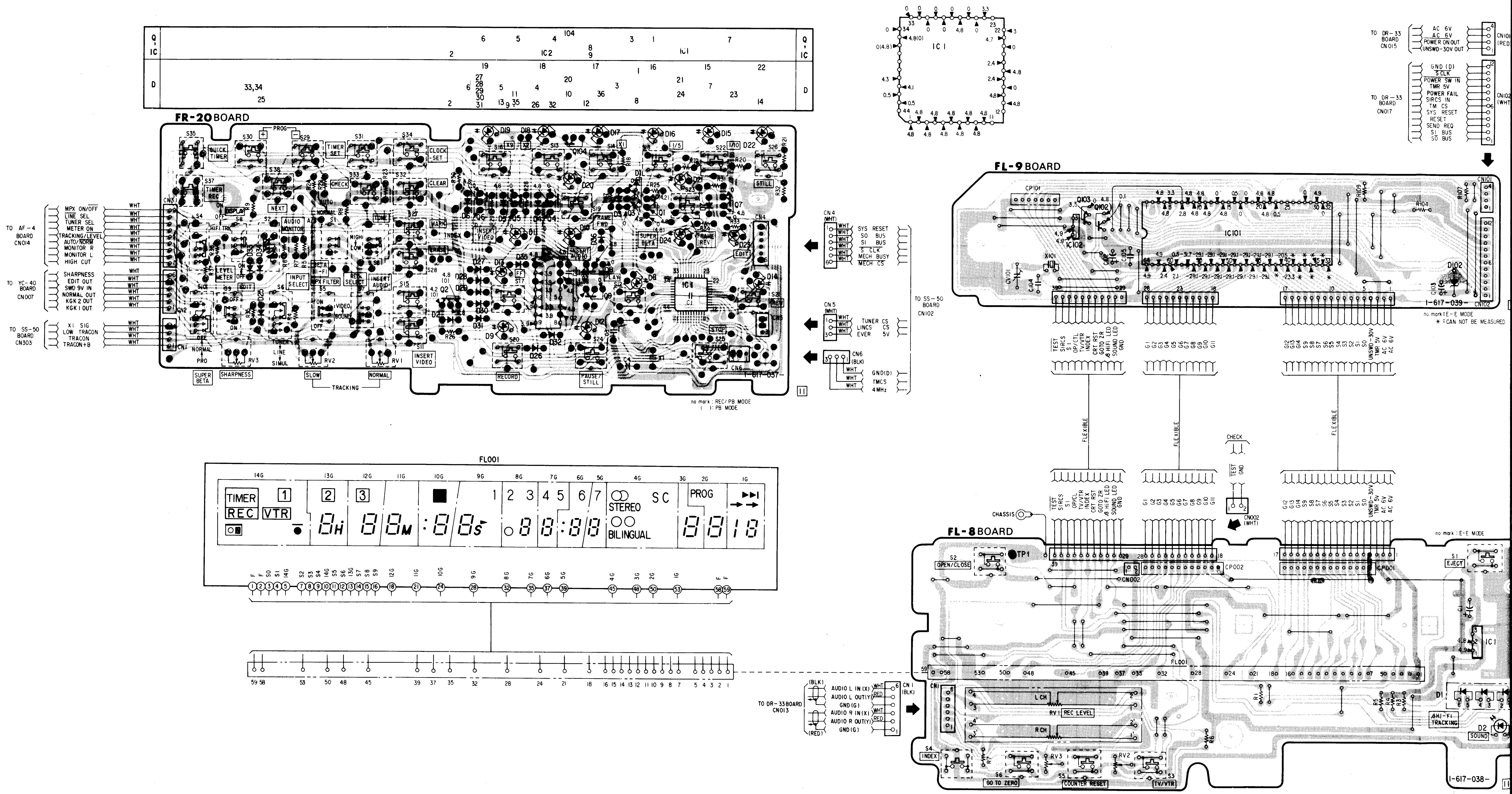
- The red lines show the main voltages.
- All voltages are dc measured with a VOM (10 MΩ).
- ━━ : B+ bus.
- ━ ━ : B– bus.

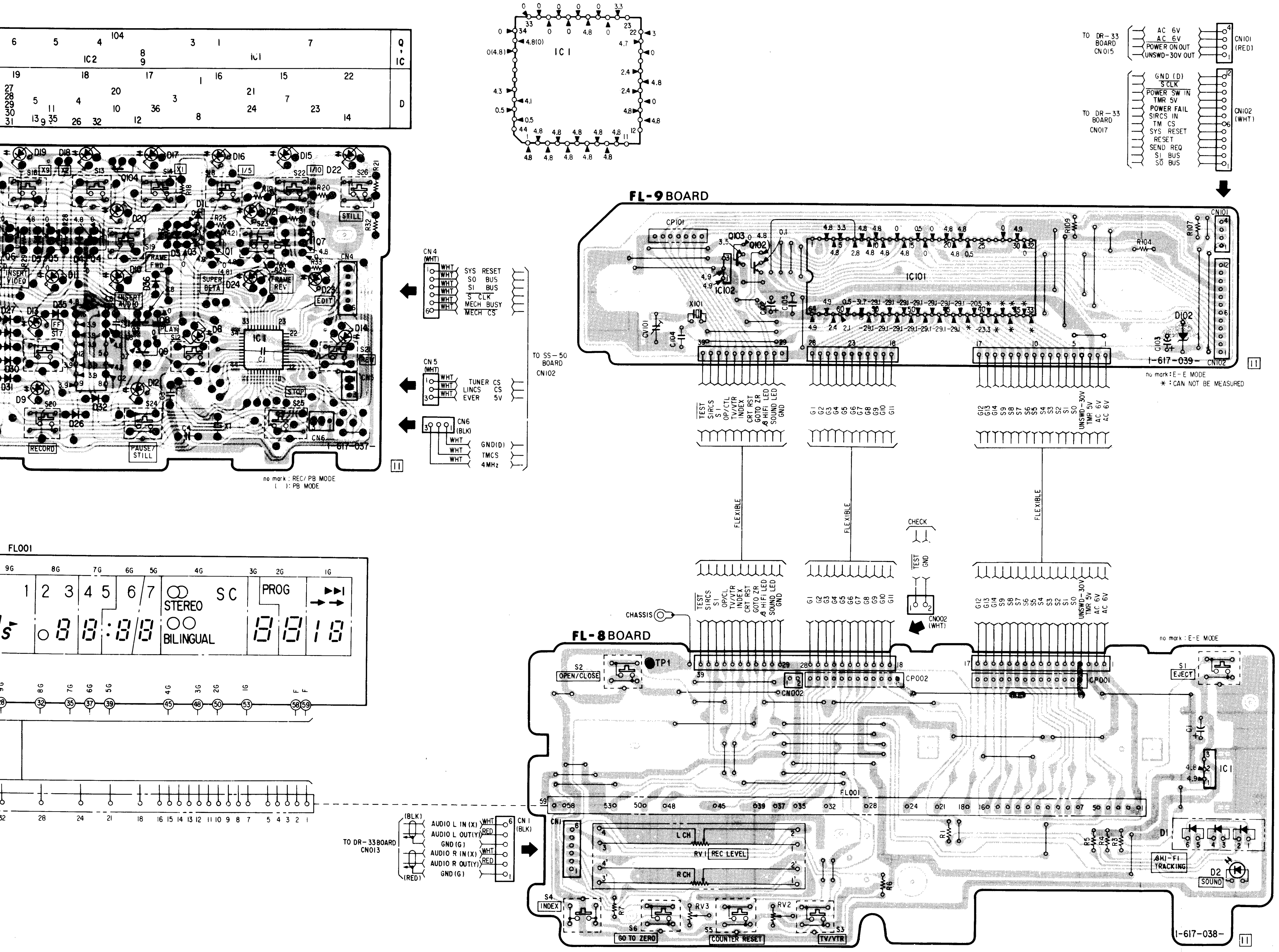
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

FL-8 (INDICATOR), FL-9 (TIMER CONTROL), FR-20 (FUNCTION SWITCH) PRINTED WIRING BOARDS

– Ref. No. FL-8 BOARD: 9,600 series, FL-9 BOARD: 9,700 series, FR-20 BOARD: 9,800 series,–

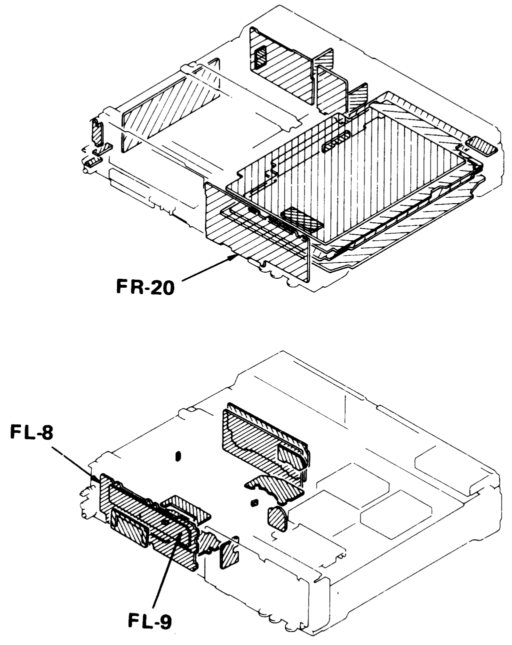

FR-20 BOARD
FL-9 BOARD
FL-8 BOARD
FL001
IC1
IC2
IC101
TO AF-4 BOARD CN014
MPX ON/OFF
LINE SEL
TUNER SEL
METER ON
TRACKING/LEVEL
AUTO/NORM
MONITOR R
MONITOR L
HIGH CUT
TO YC-40 BOARD CN007
SHARPNESS
EDIT OUT
SWD 9V IN
NORMAL OUT
KGK 2 OUT
KGK 1 OUT
TO SS-50 BOARD CN303
X1 SIG
LOW TRACON
TRACON
TRACON+B
CN4 (WHT)
SYS RESET
SO BUS
SI BUS
S CLK
MECH BUSY
MECH CS
CN5 (WHT)
TUNER CS
LINCS CS
EVER 5V
CN6 (BLK)
GND(D)
TMCS
4MHz
TO SS-50 BOARD CN102
QUICK TIMER
TIMER SET
CLOCK SET
CLEAR
TIMER REC
DISPLAY
NEXT
AUDIO MONITOR
CHECK
TUNER
LEVEL METER
EDIT
INPUT SELECT
MPX FILTER
REC SELECT
INSERT AUDIO
INSERT VIDEO
SUPER BETA
SHARPNESS
SLOW
NORMAL
TRACKING
RECORD
PAUSE/STILL
PLAY
FRAME FWD
FRAME REV
STILL
STOP
1-617-037-
no mark : REC/PB MODE
( ) : PB MODE
TO DR-33 BOARD CN015
AC 6V
AC 6V
POWER ON OUT
UNSWD-30V OUT
CN101 (RED)
TO DR-33 BOARD CN017
GND (D)
S CLK
POWER SW IN
TMR 5V
POWER FAIL
SIRCS IN
TM CS
SYS RESET
RESET
SEND REQ
SI BUS
SO BUS
CN102 (WHT)
1-617-039-
no mark : E-E MODE
* : CAN NOT BE MEASURED
FLEXIBLE
CHECK
TEST GND
CN002 (WHT)
CHASSIS
TP1
OPEN/CLOSE
EJECT
CP002
CP001
TIMER
REC
VTR
STEREO
SC
BILINGUAL
PROG
TO DR-33 BOARD CN013
AUDIO L IN(X)
AUDIO L OUT(Y)
GND(G)
AUDIO R IN(X)
AUDIO R OUT(Y)
GND(G)
CN1 (BLK)
L CH
R CH
REC LEVEL
INDEX
GO TO ZERO
COUNTER RESET
TV/VTR
8H-Fi TRACKING
SOUND
1-617-038-


IC2
IC1
Q
IC
D
IC 1
TO DR-33 BOARD CN015
AC 6V
AC 6V
POWER ON OUT
UNSWD-30V OUT
CN101 (RED)
TO DR-33 BOARD CN017
GND (D)
S CLK
POWER SW IN
TMR 5V
POWER FAIL
SIRCS IN
TM CS
SYS RESET
RESET
SEND REQ
SI BUS
SO BUS
CN102 (WHT)
FL-9 BOARD
CP101
IC101
IC102
Q101
Q102
Q103
X101
D102
R104
R107
1-617-039-
no mark : E-E MODE
* : CAN NOT BE MEASURED
CN4 (WHT)
SYS RESET
SO BUS
SI BUS
S CLK
MECH BUSY
MECH CS
CN5 (WHT)
TUNER CS
LINCS CS
EVER 5V
CN6 (BLK)
GND(D)
TMCS
4MHz
TO SS-50 BOARD CN102
no mark : REC/PB MODE
( ) : PB MODE
RECORD
PAUSE/STILL
STILL
EDIT
STOP
PLAY
SUPER BETA
INSERT VIDEO
INSERT AUDIO
FRAME FWD
FRAME REV
617-037-
FL001
STEREO
BILINGUAL
PROG
SC
TEST
SIRCS
S1
OP/CL
TV/VTR
INDEX
CRT RST
GOTO ZR
HI-FI LED
SOUND LED
GND
FLEXIBLE
CHECK
TEST
GND
CN002 (WHT)
CHASSIS
UNSWD-30V
TMR 5V
AC 6V
AC 6V
FL-8 BOARD
TP1
S2
OPEN/CLOSE
CN002
CP002
CP001
S1
EJECT
IC1
FL001
CN1
L CH
R CH
RV1
REC LEVEL
D1
HI-FI TRACKING
D2
SOUND
S4
INDEX
S6
GO TO ZERO
S5
COUNTER RESET
RV3
RV2
S3
TV/VTR
1-617-038-
no mark : E-E MODE
TO DR-33 BOARD CN013
AUDIO L IN (X)
AUDIO L OUT (Y)
GND (G)
AUDIO R IN (X)
AUDIO R OUT (Y)
GND (G)
CN1 (BLK)

Note on Printed Wiring Board:

- ○—— : Indicates a leadwire mounted on the component side.
- ●—— : Indicates a leadwire mounted on the printed side.
- ⊗ : through hole
- ▨ : soldering side.
- ▨ : B+ pattern
- ▨ : component side.
- Digital transistor (FR-20: Q104. FL-9: Q102, 103) transistors with resistors.
  Refer to the FR-20 and FL-9 boards schematic diagrams.

When indicating parts by reference number, please include the board name.

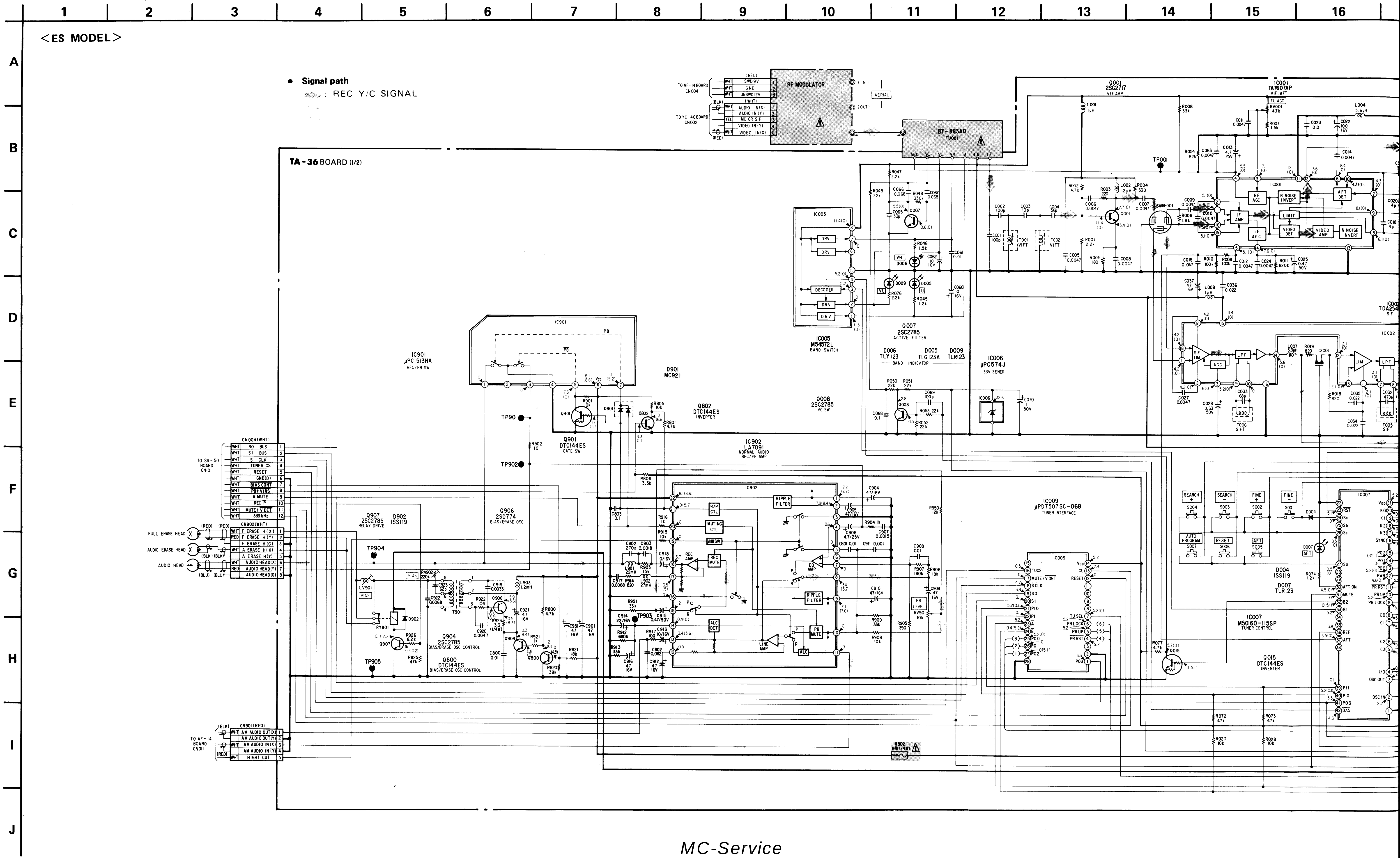

FR-20
FL-8
FL-9

4-8. TA-36 (TUNER, AUDIO) SCHEMATIC DIAGRAM

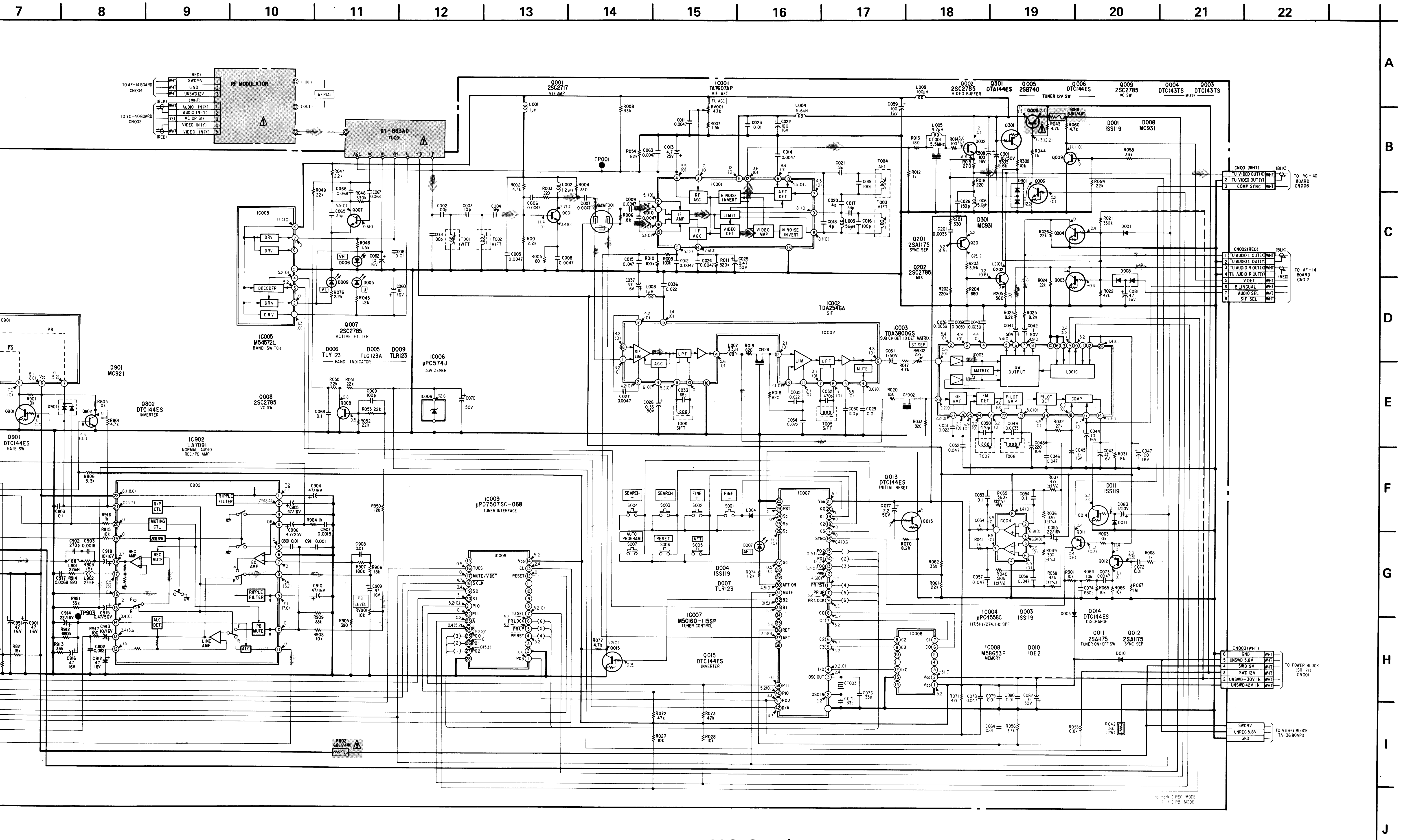
– Ref. No. TA-36 BOARD: 4,000 series –

<ES MODEL>

- **Signal path**
  : REC Y/C SIGNAL


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
TA-36 BOARD (1/2)
RF MODULATOR
BT-883AD TU001
TO AF-14 BOARD CN004
TO YC-40 BOARD CN002
AERIAL
Q001 2SC2717 VIF AMP
IC001 TA7607AP VIF AFT
IC005 M54572L BAND SWITCH
Q007 2SC2785 ACTIVE FILTER
D006 TLY123
D005 TLG123A
D009 TLR123
BAND INDICATOR
IC006 μPC574J 33V ZENER
Q008 2SC2785 VC SW
IC901 μPC1513HA REC/PB SW
D901 MC921
Q802 DTC144ES INVERTER
Q901 DTC144ES GATE SW
IC902 LA7091 NORMAL AUDIO REC/PB AMP
TP901
TP902
TP903
TP904
TP905
CN004 (WHT)
TO SS-50 BOARD CN101
CN902 (WHT)
FULL ERASE HEAD
AUDIO ERASE HEAD
AUDIO HEAD
Q907 2SC2785 RELAY DRIVE
D902 1SS119
Q906 2SD774 BIAS/ERASE OSC
Q904 2SC2785 BIAS/ERASE OSC CONTROL
Q800 DTC144ES BIAS/ERASE OSC CONTROL
RY901
LV901
T901
CN901 (RED)
TO AF-14 BOARD CN011
IC009 μPD7507SC-068 TUNER INTERFACE
IC007 M50160-115SP TUNER CONTROL
Q015 DTC144ES INVERTER
D004 1SS119
D007 TLR123
SEARCH +
SEARCH −
FINE +
FINE −
AUTO PROGRAM
RESET
AFT
IC002 TDA254
TP001
SAWF001
R802 68(1/4W)
RF AGC
IF AMP
IF AGC
B NOISE INVERT
LIMIT
VIDEO DET
VIDEO AMP
N NOISE INVERT
AFT DET
SIF LIM
AGC
LPF
LIM
R/P CTL
MUTING CTL
RIPPLE FILTER
EQ AMP
REC AMP
REC MUTE
ALC DET
LINE AMP
PB MUTE
ALC
DECODER
DRV

MC-Service


RF MODULATOR
BT-883AD
TU001
AERIAL
TO AF-14 BOARD CN004
TO YC-40 BOARD CN002
IC001 TA7607AP VIF AFT
Q001 2SC2717 VIF AMP
Q002 2SC2785 VIDEO BUFFER
Q301 DTA144ES
Q005 2SB740 TUNER 12V SW
Q006 DTC144ES
Q009 2SC2785 VC SW
Q004 DTC143TS
Q003 DTC143TS MUTE
D001 1SS119
D008 MC931
CN001(WHT)
TU VIDEO OUT(X)
TU VIDEO OUT(Y)
COMP SYNC
TO YC-40 BOARD CN006
CN002(RED)
TU AUDIO L OUT(X)
TU AUDIO L OUT(Y)
TU AUDIO R OUT(X)
TU AUDIO R OUT(Y)
V DET
BILINGUAL
AUDIO SEL
SIF SEL
TO AF-14 BOARD CN012
IC005 M54572L BAND SWITCH
Q007 2SC2785 ACTIVE FILTER
D006 TLY123
D005 TLG123A
D009 TLR123
BAND INDICATOR
IC006 μPC574J 33V ZENER
Q008 2SC2785 VC SW
IC002 TDA2546A SIF
IC003 TDA3800GS SUB CH DET, ID DET MATRIX
Q201 2SA1175 SYNC SEP
Q202 2SC2785 MIX
D301 MC931
D901 MC921
Q802 DTC144ES INVERTER
Q901 DTC144ES GATE SW
IC902 LA7091 NORMAL AUDIO REC/PB AMP
IC009 μPD7507SC-068 TUNER INTERFACE
IC007 M50160-115SP TUNER CONTROL
Q015 DTC144ES INVERTER
Q013 DTC144ES INITIAL RESET
D011 1SS119
D004 1SS119
D007 TLR123
IC004 μPC4558C 117.5Hz/274.1Hz BPF
D003 1SS119
Q014 DTC144ES DISCHARGE
Q011 2SA1175 TUNER ON/OFF SW
Q012 2SA1175 SYNC SEP
IC008 M58653P MEMORY
D010 1OE2
CN003(WHT)
GND
UNSWD 5.8V
SWD 9V
SWD 12V
UNSWD-30V IN
UNSWD 42V IN
TO POWER BLOCK (SR-21) CN001
SWD 9V
UNREG 5.8V
GND
TO VIDEO BLOCK TA-36 BOARD
SEARCH + S004
SEARCH − S003
FINE + S002
FINE − S001
AUTO PROGRAM S007
RESET S006
AFT S005
R802 68Ω(1/4W)
no mark : REC MODE
( ) : PB MODE
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
A B C D E F G H I J

MC-Service

TA-36 (TUNER, AUDIO) PRINTED WIRING BOARD

– Ref. No. TA-36 BOARD: 4,000 series –

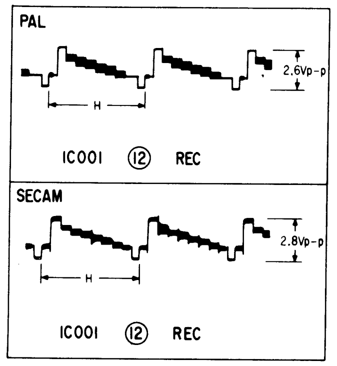
Note on Schematic Diagram:

- All resistors are in ohms, $\frac{1}{6}$W unless otherwise noted. kΩ: 1000 Ω, MΩ: 1000 kΩ
- All capacitors are in μF unless otherwise noted. p: μμF 50WV or less are not indicated except for electrolytics.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ▭ : nonflammable resistor.
- ⏦ : fusible resistor.
- The red lines show the main voltages.
- All voltages are dc measured with a VOM (10 MΩ).
- ▬ : B+ bus.
- ▬ ▬ : B– bus.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

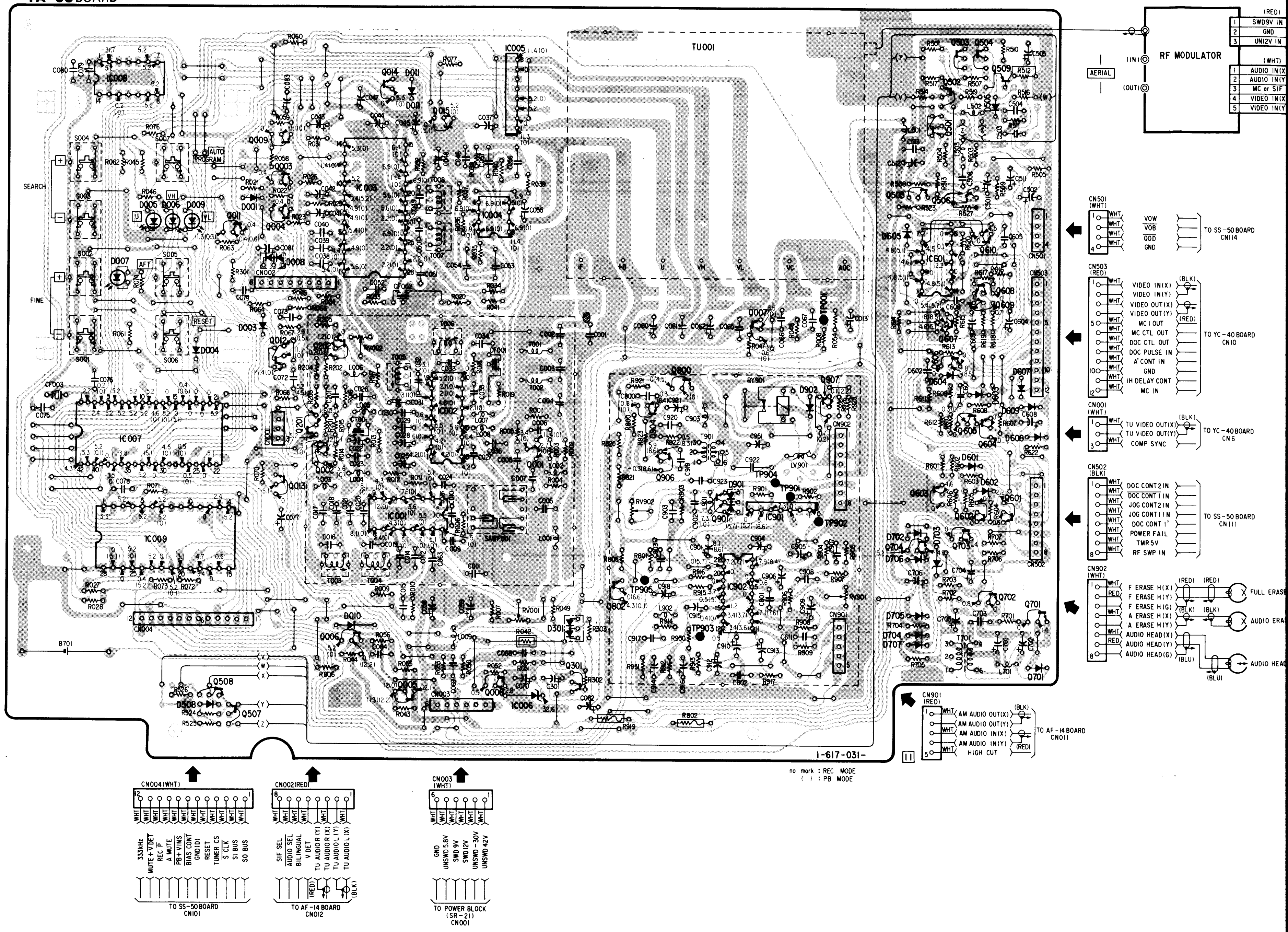
When indicating parts by reference number, please include the board name.

TA-36 BOARD



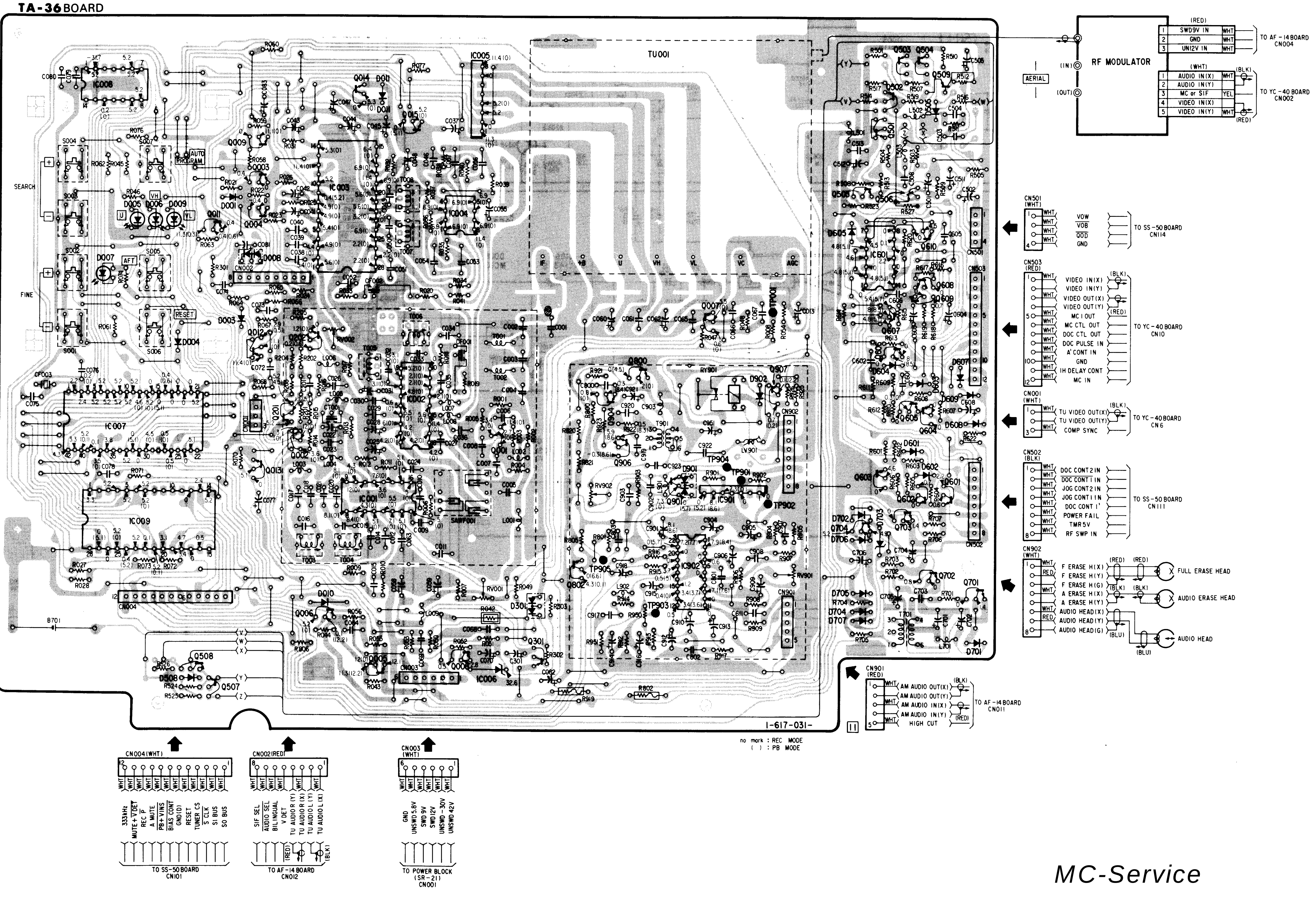
	7	8	9	10	11	12	13	14	15	
Q·IC		IC008 IC007 IC009	009,003 004 011 012 013 201,002 508 507	014 IC003 015 202 IC002 IC001 006 005	IC005 IC004 001 008 IC006 301	904 906 800 802 901	007 907 IC901 IC902	501,502 503,504 505 IC601 506 610 607,606 608,609 603 605,604 704 703	509 602 601 702 701	Q·IC
D		007 005 006 009 004	001 003 008 508	011 010	301		902 901	605 604,603 601,602 702,706,703 705,704,707	505 607 609,608 701	D
ADJ				RV002	RV001	RV902	LV901 RV901			ADJ
TP						905 903	001 904 901 902			TP

TA-36 BOARD


TU001
SEARCH
FINE
RF MODULATOR
AERIAL
(IN)
(OUT)
(RED)
1 SWD9V IN
2 GND
3 UNI2V IN
(WHT)
1 AUDIO IN(X)
2 AUDIO IN(Y)
3 MC or SIF
4 VIDEO IN(X)
5 VIDEO IN(Y)
CN501 (WHT)
VOW
VOB
QOD
GND
TO SS-50 BOARD CN114
CN503 (RED)
VIDEO IN(X)
VIDEO IN(Y)
VIDEO OUT(X)
VIDEO OUT(Y)
MC1 OUT
MC CTL OUT
DOC CTL OUT
DOC PULSE IN
A'CONT IN
GND
1H DELAY CONT
MC IN
TO YC-40 BOARD CN10
CN001 (WHT)
TU VIDEO OUT(X)
TU VIDEO OUT(Y)
COMP SYNC
TO YC-40 BOARD CN6
CN502 (BLK)
DOC CONT2 IN
DOC CONT1 IN
JOG CONT2 IN
JOG CONT1 IN
DOC CONT 1'
POWER FAIL
TMR5V
RF SWP IN
TO SS-50 BOARD CN111
CN902 (WHT)
F ERASE H(X)
F ERASE H(Y)
F ERASE H(G)
A ERASE H(X)
A ERASE H(Y)
AUDIO HEAD(X)
AUDIO HEAD(Y)
AUDIO HEAD(G)
FULL ERASE
AUDIO ERA
AUDIO HEAD
CN901 (RED)
AM AUDIO OUT(X)
AM AUDIO OUT(Y)
AM AUDIO IN(X)
AM AUDIO IN(Y)
HIGH CUT
TO AF-14 BOARD CN011
1-617-031-
no mark : REC MODE
( ) : PB MODE
CN004(WHT)
333kHz
MUTE+V DET
REC P
A MUTE
PB+VINS
BIAS CONT
GND(D)
RESET
TUNER CS
S CLK
SI BUS
SO BUS
TO SS-50 BOARD CN101
CN002(RED)
SIF SEL
AUDIO SEL
BILINGUAL
V DET
TU AUDIO R(Y)
TU AUDIO R(X)
TU AUDIO L(Y)
TU AUDIO L(X)
TO AF-14 BOARD CN012
CN003 (WHT)
GND
UNSWD 5.8V
SWD 9V
SWD12V
UNSWD -30V
UNSWD 42V
TO POWER BLOCK (SR-21) CN001

7	8	9	10	11	12	13	14	15	
	IC008 IC007 IC009	011 009,003 004 012 013 201,002 508 507	IC003 014 202 015 006 IC001 005 011 IC002	IC005 IC004 001 008 IC006 301	802 904 906 800 901	IC902 007 IC901 907	505 IC601 501,502 503,504 506 610 607,606 608,609 603 605,604 704 703 602	509 601 702 701	Q · IC
	007 005 006 009 004	001 003 008 508	010 011	301		901 902	605 604,603 601,602 702,706,703 705,704,707	505 607 609,608 701	D
			RV002	RV001	RV902	LV901 RV901			ADJ
					905 903	904 901 001 902			TP

TA-36 BOARD


TU001
IC005
IC003
IC004
IC001
IC002
IC006
IC007
IC008
IC009
IC601
IC901
IC902
SEARCH
FINE
AUTO PROGRAM
RESET
AFT
S004
S005
S006
S008
VH
VL
AGC
TP901
TP902
TP903
TP904
TP905
RV001
RV002
RV901
RV902
LV901
B701
1-617-031-
11
RF MODULATOR
AERIAL
(IN)
(OUT)
(RED)
1 SWD9V IN WHT
2 GND WHT
3 UN12V IN WHT
TO AF-14 BOARD CN004
(WHT)
1 AUDIO IN(X) WHT
2 AUDIO IN(Y)
3 MC or SIF YEL
4 VIDEO IN(X)
5 VIDEO IN(Y) WHT
(BLK)
(RED)
TO YC-40 BOARD CN002
CN501 (WHT)
VOW
VOB
QOD
GND
TO SS-50 BOARD CN114
CN503 (RED)
VIDEO IN(X)
VIDEO IN(Y)
VIDEO OUT(X)
VIDEO OUT(Y)
MC I OUT
MC CTL OUT
DOC CTL OUT
DOC PULSE IN
A' CONT IN
GND
IH DELAY CONT
MC IN
TO YC-40 BOARD CN10
CN001 (WHT)
TU VIDEO OUT(X)
TU VIDEO OUT(Y)
COMP SYNC
TO YC-40 BOARD CN6
CN502 (BLK)
DOC CONT 2 IN
DOC CONT 1 IN
JOG CONT 2 IN
JOG CONT 1 IN
DOC CONT 1'
POWER FAIL
TMR 5V
RF SWP IN
TO SS-50 BOARD CN111
CN902 (WHT)
F ERASE H(X)
F ERASE H(Y)
F ERASE H(G)
A ERASE H(X)
A ERASE H(Y)
AUDIO HEAD(X)
AUDIO HEAD(Y)
AUDIO HEAD(G)
(RED)
(BLK)
(BLU)
FULL ERASE HEAD
AUDIO ERASE HEAD
AUDIO HEAD
CN901 (RED)
AM AUDIO OUT(X)
AM AUDIO OUT(Y)
AM AUDIO IN(X)
AM AUDIO IN(Y)
HIGH CUT
TO AF-14 BOARD CN011
CN004 (WHT)
333kHz
MUTE + VDET
REC P
A MUTE
PB + VINS
BIAS CONT
GND(D)
RESET
TUNER CS
S CLK
SI BUS
SO BUS
TO SS-50 BOARD CN101
CN002 (RED)
SIF SEL
AUDIO SEL
BILINGUAL
V DET
TU AUDIO R (Y)
TU AUDIO R (X)
TU AUDIO L (Y)
TU AUDIO L (X)
TO AF-14 BOARD CN012
CN003 (WHT)
GND
UNSWD 5.8V
SWD 9V
SWD 12V
UNSWD -30V
UNSWD 42V
TO POWER BLOCK (SR-21) CN001
WHT

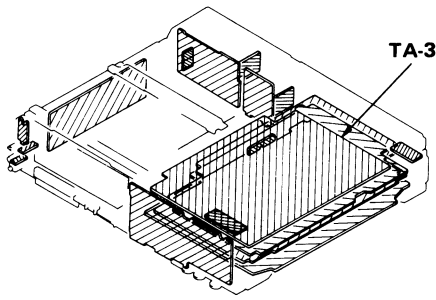
no mark : REC MODE
( ) : PB MODE

Note on Printed Wiring Board:

- ○— : Indicates a leadwire mounted on the component side.
- ●— : Indicates a leadwire mounted on the printed side.
- ▨ : soldering side.
- ░ : B+ pattern

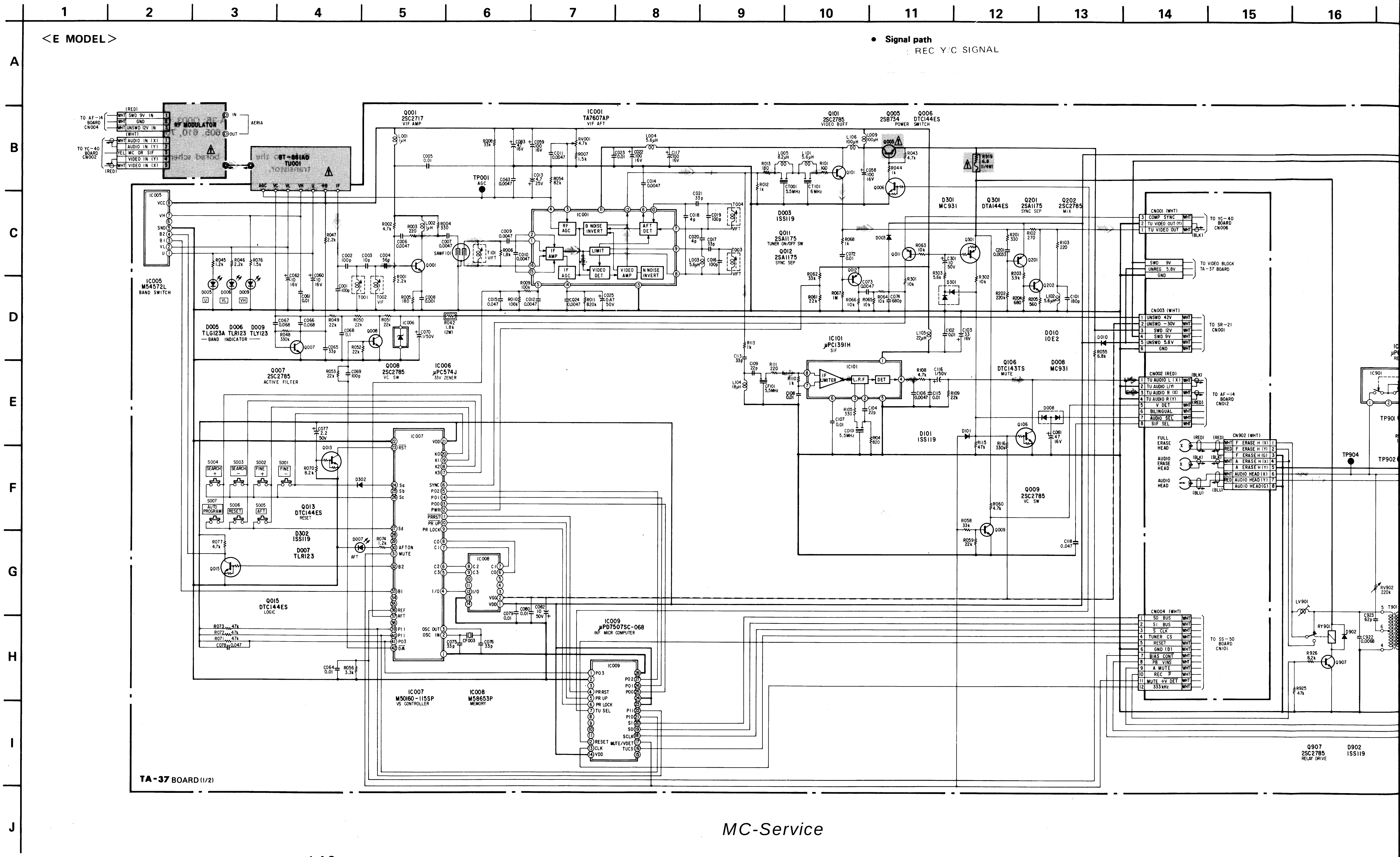
- Digital transistor (TA-36: Q003, 004, 006, 013, 014, 015, 301, 508, 601, 604, 605, 610, 703, 800, 802, 901) transistors with resistors.
  Refer to the TA-36 borad schematic diagram for digital transistor.

When indicating parts by reference number, please include the board name.



4-9. TA-37 (TUNER, AUDIO) SCHEMATIC DIAGRAM

– Ref. No. TA-37 BOARD: 5,000 series –


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
<E MODEL>
● Signal path
: REC Y/C SIGNAL
TO AF-14 BOARD CN004
TO YC-40 BOARD CN002
RF MODULATOR
AERIA
IN
OUT
BT-881AD TU001
AGC VC VL VH U +B IF
IC005 M54572L BAND SWITCH
D005 D006 D009 TLG123A TLR123 TLY123 —BAND INDICATOR—
Q007 2SC2785 ACTIVE FILTER
Q008 2SC2785 VC SW
IC006 μPC574J 33V ZENER
Q001 2SC2717 VIF AMP
IC001 TA7607AP VIF AFT
TP001 AGC
RF AGC
B NOISE INVERT
AFT DET
LIMIT
IF AMP
IF AGC
VIDEO DET
VIDEO AMP
N NOISE INVERT
T001
T002 VIF
T101 VIFT
T003 VIFT
T004 VIFT
SAWF101
Q101 2SC2785 VIDEO BUFF
Q005 2SB734 POWER SWITCH
Q006 DTC144ES
D003 1SS119
Q011 2SA1175 TUNER ON/OFF SW
Q012 2SA1175 SYNC SEP
CT001 5.5MHz
CT101 6MHz
R919 6.8 (1/4W)
D301 MC931
Q301 DTA144ES
Q201 2SA1175 SYNC SEP
Q202 2SC2785 MIX
IC101 μPC1391H SIF
IF LIMITER
L.P.F
DET
CF101 5.5MHz
CD101 5.5MHz
D010 10E2
Q106 DTC143TS MUTE
D008 MC931
D101 1SS119
Q009 2SC2785 VC SW
CN001 (WHT)
COMP SYNC
TU VIDEO OUT (Y)
TU VIDEO OUT
TO YC-40 BOARD CN006
SWD 9V
UNREG 5.8V
GND
TO VIDEO BLOCK TA-37 BOARD
CN003 (WHT)
UNSWD 42V
UNSWD -30V
SWD 12V
SWD 9V
UNSWD 5.8V
GND
TO SR-21 CN001
CN002 (RED)
TU AUDIO L (X)
TU AUDIO L(Y)
TU AUDIO R (X)
TU AUDIO R (Y)
V DET
BILINGUAL
AUDIO SEL
SIF SEL
TO AF-14 BOARD CN012
FULL ERASE HEAD
AUDIO ERASE HEAD
AUDIO HEAD
CN902 (WHT)
F ERASE H (X)
F ERASE H (Y)
F ERASE H (G)
A ERASE H (X)
A ERASE H (Y)
AUDIO HEAD (X)
AUDIO HEAD (Y)
AUDIO HEAD (G)
TP904
TP902
TP901
IC901
S004 SEARCH +
S003 SEARCH −
S002 FINE +
S001 FINE −
S007 AUTO PROGRAM
S006 RESET
S005 AFT
Q013 DTC144ES RESET
D302 1SS119
D007 TLR123
Q015 DTC144ES LOGIC
IC007
IC008
IC007 M50160-115SP VS CONTROLLER
IC008 M58653P MEMORY
IC009 μPD7507SC-068 INF MICR COMPUTER
CF003
CN004 (WHT)
SO BUS
SI BUS
S CLK
TUNER CS
RESET
GND (D)
BIAS CONT
PB VINS
A MUTE
REC P
MUTE +V DET
333kHz
TO SS-50 BOARD CN101
LV901
RY901
RV902 220k
D902
Q907
Q907 2SC2785 RELAY DRIVE
D902 1SS119
TA-37 BOARD (1/2)

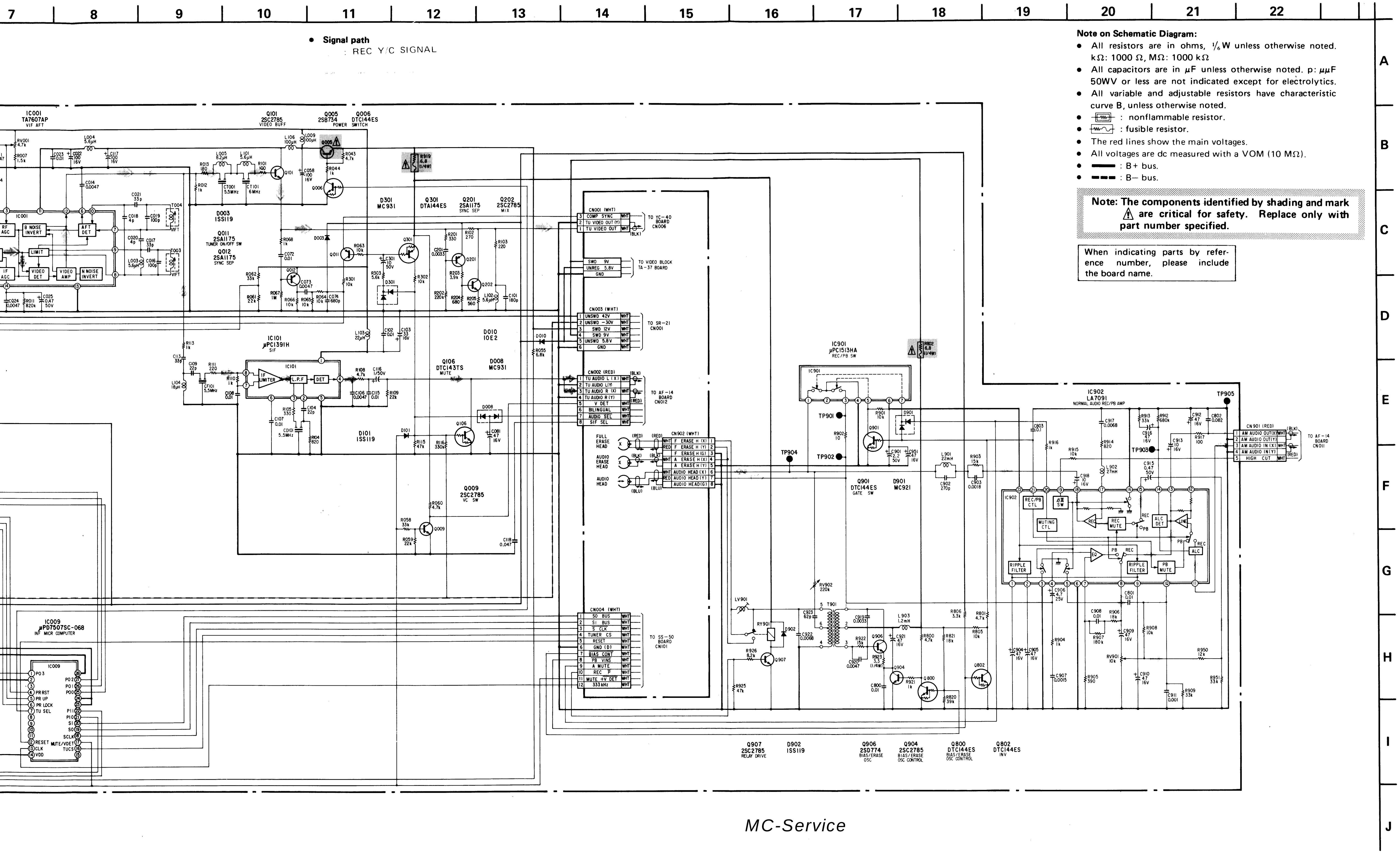
MC-Service

Note on Schematic Diagram:

- All resistors are in ohms, $^1/_6$W unless otherwise noted. kΩ: 1000 Ω, MΩ: 1000 kΩ
- All capacitors are in µF unless otherwise noted. p: µµF 50WV or less are not indicated except for electrolytics.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.
- The red lines show the main voltages.
- All voltages are dc measured with a VOM (10 MΩ).
- ━━ : B+ bus.
- ━ ━ ━ : B– bus.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

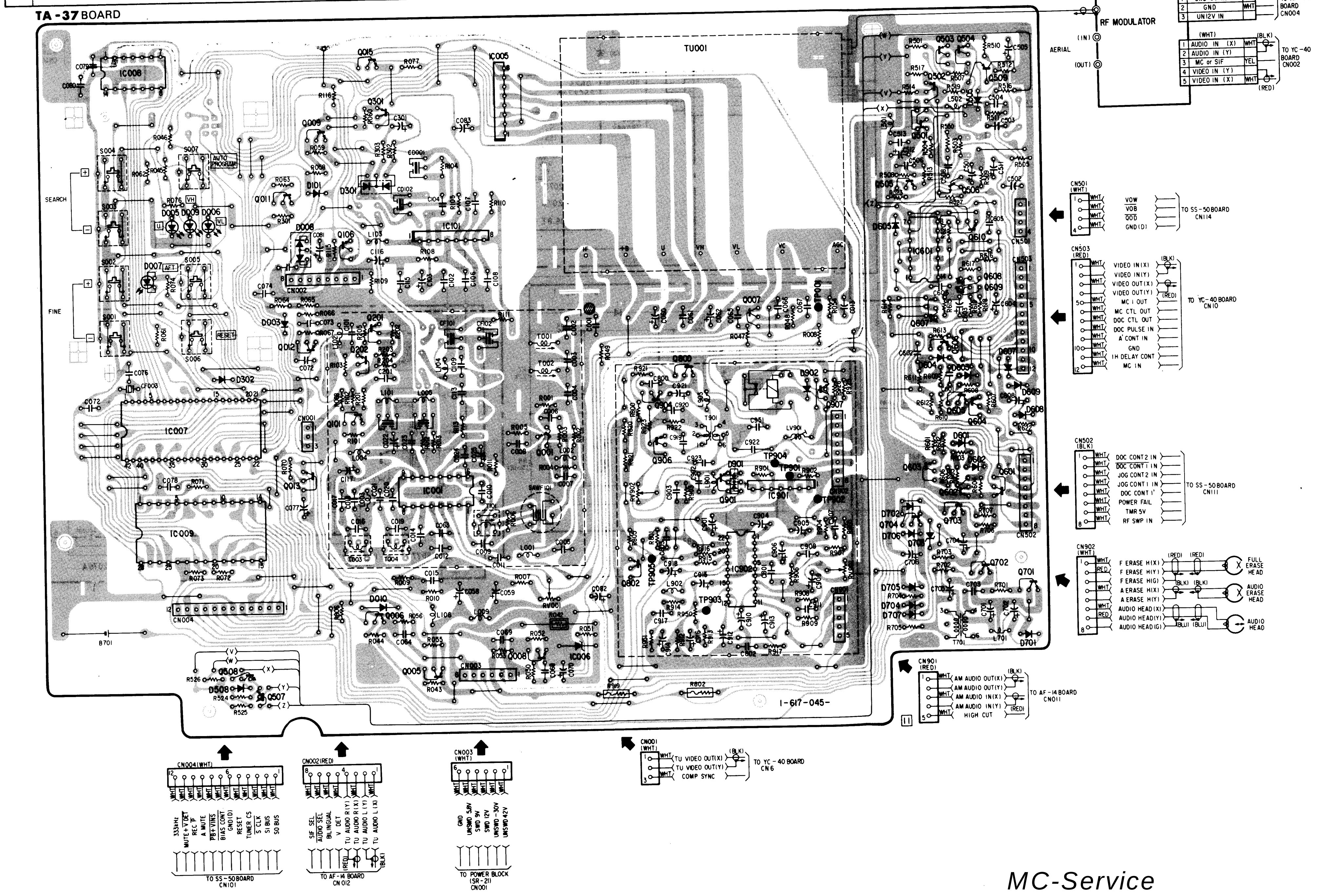


• Signal path
: REC Y/C SIGNAL
IC001 TA7607AP VIF AFT
Q101 2SC2785 VIDEO BUFF
Q005 2SB734 POWER
Q006 DTC144ES SWITCH
D301 MC931
Q301 DTA144ES
Q201 2SA1175 SYNC SEP
Q202 2SC2785 MIX
D003 1SS119
Q011 2SA1175 TUNER ON/OFF SW
Q012 2SA1175 SYNC SEP
IC101 µPC1391H SIF
D010 10E2
Q106 DTC143TS MUTE
D008 MC931
D101 1SS119
Q009 2SC2785 VC SW
IC009 µPD7507SC-068 INF MICR COMPUTER
CN001 (WHT) TO YC-40 BOARD CN006
TO VIDEO BLOCK TA-37 BOARD
CN003 (WHT) TO SR-21 CN001
CN002 (RED) TO AF-14 BOARD CN012
CN902 (WHT)
FULL ERASE HEAD
AUDIO ERASE HEAD
AUDIO HEAD
CN004 (WHT) TO SS-50 BOARD CN101
IC901 µPC1513HA REC/PB SW
TP901
TP902
TP904
Q901 DTC144ES GATE SW
D901 MC921
IC902 LA7091 NORMAL AUDIO REC/PB AMP
TP905
TP903
CN901 (RED) TO AF-14 BOARD CN011
Q907 2SC2785 RELAY DRIVE
D902 1SS119
Q906 2SD774 BIAS/ERASE OSC
Q904 2SC2785 BIAS/ERASE OSC CONTROL
Q800 DTC144ES BIAS/ERASE OSC CONTROL
Q802 DTC144ES INV
R919 6.8 (1/4W)
R802 6.8 (1/4W)
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
A B C D E F G H I J

TA-37 (TUNER, AUDIO) PRINTED WIRING BOARD

– Ref. No. TA-37 BOARD: 5,000 series –

	2	3	4	5	6	7	8	9
Q·IC	IC008	IC007 IC009 508 507	011 009 015 301 201 202 101 012 013 006 005	IC101 IC003 001	008 IC006 802 904	906 800 901 IC902 007 IC901	907	505 501, 502 IC601 503, 504 506 610 509 607, 606 608, 609 603 605, 604 703 602 601 704 702 701
D	007	005 009 006 302 508 003	101 008 301 010			901	902 605	505 604, 603 601, 602 607 609, 608 702, 706, 703 705, 704, 707 701
ADJ				RV001	RV902		LV901 RV901	
TP					905	903 904	901 001 902	


1
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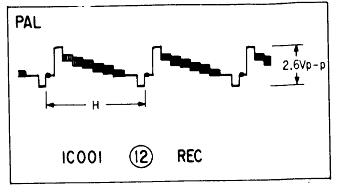
11
12
13
14
15
A
B
C
D
E
F
G
H
I
J
TA-37 BOARD
TU001
IC008
IC005
IC007
IC009
IC001
IC101
IC901
IC902
Q015
Q501
Q009
Q011
Q106
Q012
Q201
Q005
Q007
Q906
Q901
Q902
Q508
Q507
D008
D101
D301
D005 D009 D006
D007
D003
D302
D010
D508
S004
S007
S003
S002
S005
S001
S006
AUTO PROGRAM
RESET
SEARCH
FINE
CN001
CN002
CN003
CN004
CN501
CN502
CN503
CN901
CN902
T001
T002
T901
T701
LV901
RV901
RV902
TP903
TP904
TP901
R919
R802
1-617-045-
RF MODULATOR
AERIAL
(IN)
(OUT)
(RED)
1 SWD 9V IN WHT
2 GND WHT
3 UN12V IN
TO AF-14 BOARD CN004
(WHT)
1 AUDIO IN (X) WHT
2 AUDIO IN (Y)
3 MC or SIF YEL
4 VIDEO IN (Y)
5 VIDEO IN (X) WHT
(BLK)
(RED)
TO YC-40 BOARD CN002
CN501 (WHT)
VOW
VOB
QOD
GND(D)
TO SS-50 BOARD CN114
CN503 (RED)
VIDEO IN (X)
VIDEO IN (Y)
VIDEO OUT (X)
VIDEO OUT (Y)
MC 1 OUT
MC CTL OUT
DOC CTL OUT
DOC PULSE IN
A' CONT IN
GND
1H DELAY CONT
MC IN
TO YC-40 BOARD CN10
CN502 (BLK)
DOC CONT 2 IN
DOC CONT 1 IN
JOG CONT 2 IN
JOG CONT 1 IN
DOC CONT 1'
POWER FAIL
TMR 5V
RF SWP IN
TO SS-50 BOARD CN111
CN902 (WHT)
F ERASE H (X)
F ERASE H (Y)
F ERASE H (G)
A ERASE H (X)
A ERASE H (Y)
AUDIO HEAD (X)
AUDIO HEAD (Y)
AUDIO HEAD (G)
(BLU)
FULL ERASE HEAD
AUDIO ERASE HEAD
AUDIO HEAD
CN901 (RED)
AM AUDIO OUT (X)
AM AUDIO OUT (Y)
AM AUDIO IN (X)
AM AUDIO IN (Y)
HIGH CUT
TO AF-14 BOARD CN011
11
CN001 (WHT)
TU VIDEO OUT (X)
TU VIDEO OUT (Y)
COMP SYNC
TO YC-40 BOARD CN6
CN004 (WHT)
333kHz
MUTE + V DET
REC P
A MUTE
PB + VINS
BIAS CONT
GND (D)
RESET
TUNER CS
S CLK
SI BUS
SO BUS
TO SS-50 BOARD CN101
CN002 (RED)
SIF SEL
AUDIO SEL
BILINGUAL
V DET
TU AUDIO R (Y)
TU AUDIO R (X)
TU AUDIO L (Y)
TU AUDIO L (X)
TO AF-14 BOARD CN012
CN003 (WHT)
GND
UNSWD 5.8V
SWD 9V
SWD 12V
UNSWD -30V
UNSWD 42V
TO POWER BLOCK (SR-21) CN001
WHT

TA-37 BOARD

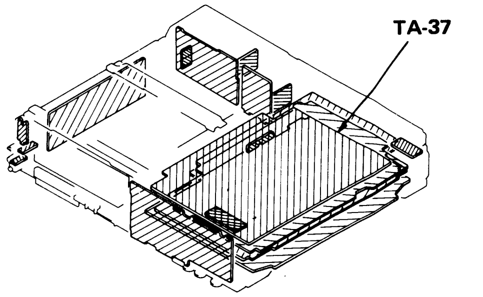


Note on Printed Wiring Board:

- ○— : Indicates a leadwire mounted on the component side.
- ●— : Indicates a leadwire mounted on the printed side.
- ▨ : soldering side.
- ░ : B+ pattern

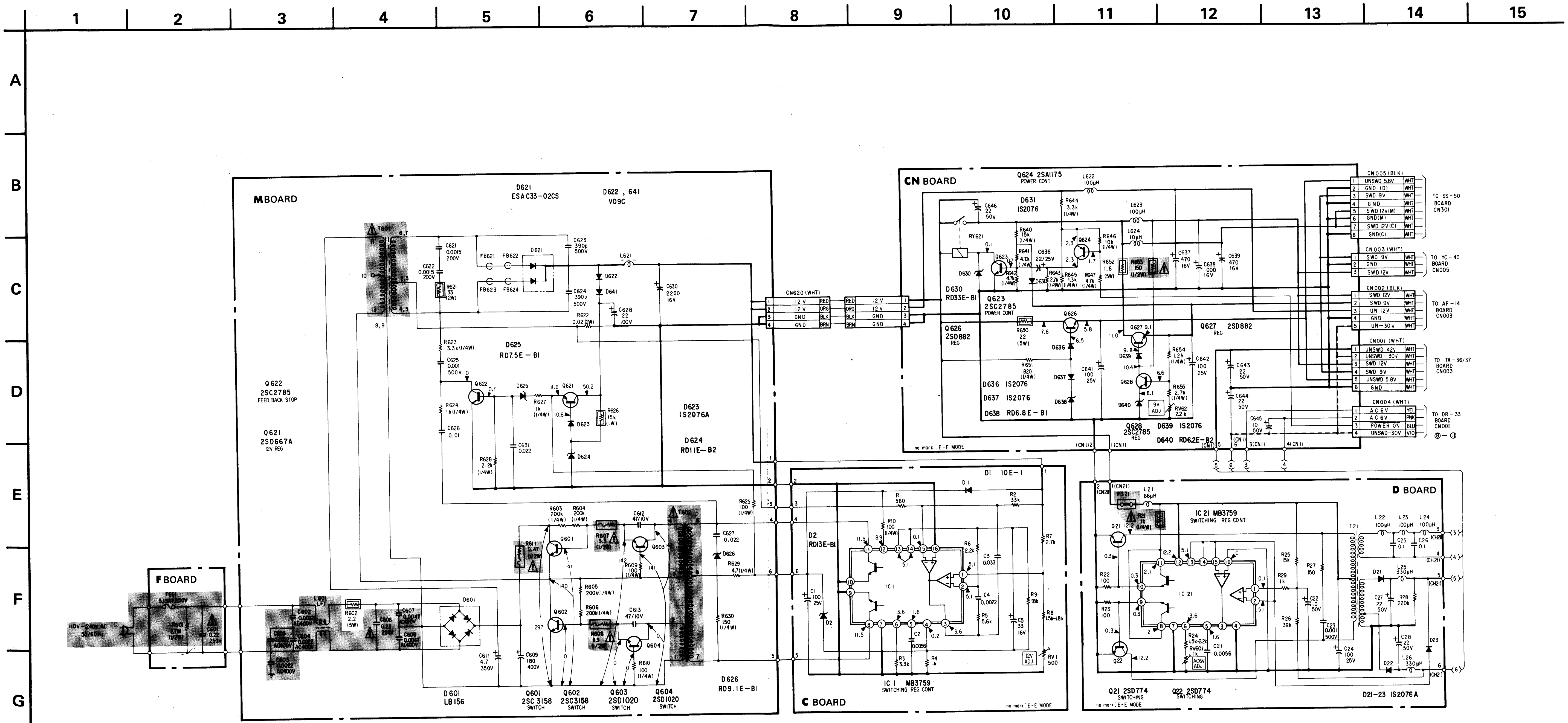
- Digital transistor (TA-37: Q006, 013, 015, 106, 301, 508, 601, 604, 605, 610, 703, 800, 802, 901) transistors with resistors.
  Refer to TA-37 board schematic diagram for digital transistor.

When indicating parts by reference number, please include the board name.



4-10. M (POWER), CN (POWER), C (POWER), D (POWER), F (POWER) SCHEMATIC DIAGRAMS

– Ref. No. M BOARD: 11,000 series, CN BOARD: 11,000 series, C BOARD:11,000 series, D BOARD: 11,000 series, F BOARD: 11,000 series –


1
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12
13
14
15
A
B
C
D
E
F
G
M BOARD
CN BOARD
C BOARD
D BOARD
F BOARD
110V-240V AC 50/60Hz
F601
T801
T602
D621 ESAC33-02CS
D622, 641 V09C
Q622 2SC2785 FEED BACK STOP
Q621 2SD667A 12V REG
D625 RD7.5E-B1
D623 1S2076A
D624 RD11E-B2
D626 RD9.1E-B1
D601 LB156
Q601 2SC3158 SWITCH
Q602 2SC3158 SWITCH
Q603 2SD1020 SWITCH
Q604 2SD1020 SWITCH
CN620 (WHT)
Q624 2SA1175 POWER CONT
D631 1S2076
D630 RD33E-B1
Q623 2SC2785 POWER CONT
Q626 2SD882 REG
Q627 2SD882 REG
Q628 2SC2785 REG
D636 1S2076
D637 1S2076
D638 RD6.8E-B1
D639 1S2076
D640 RD62E-B2
RY621
CN005 (BLK)
TO SS-50 BOARD CN301
CN003 (WHT)
TO YC-40 BOARD CN005
CN002 (BLK)
TO AF-14 BOARD CN003
CN001 (WHT)
TO TA-36/37 BOARD CN003
CN004 (WHT)
TO DR-33 BOARD CN001
D1 10E-1
D2 RD13E-B1
IC1 MB3759 SWITCHING REG CONT
IC21 MB3759 SWITCHING REG CONT
Q21 2SD774 SWITCHING
Q22 2SD774 SWITCHING
D21-23 1S2076A
no mark: E-E MODE

Note on Schematic Diagram:

- All resistors are in ohms, $^1/_6$W unless otherwise noted. kΩ: 1000 Ω, MΩ: 1000 kΩ
- All capacitors are in μF unless otherwise noted. p: μμF 50WV or less are not indicated except for electrolytics.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ▭ : nonflammable resistor.
- ⏛ : fusible resistor.
- The red lines show the main voltages.
- All voltages are dc measured with a VOM (10 MΩ).
- ▬▬ : B+ bus.
- ▬ ▬ ▬ : B– bus.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

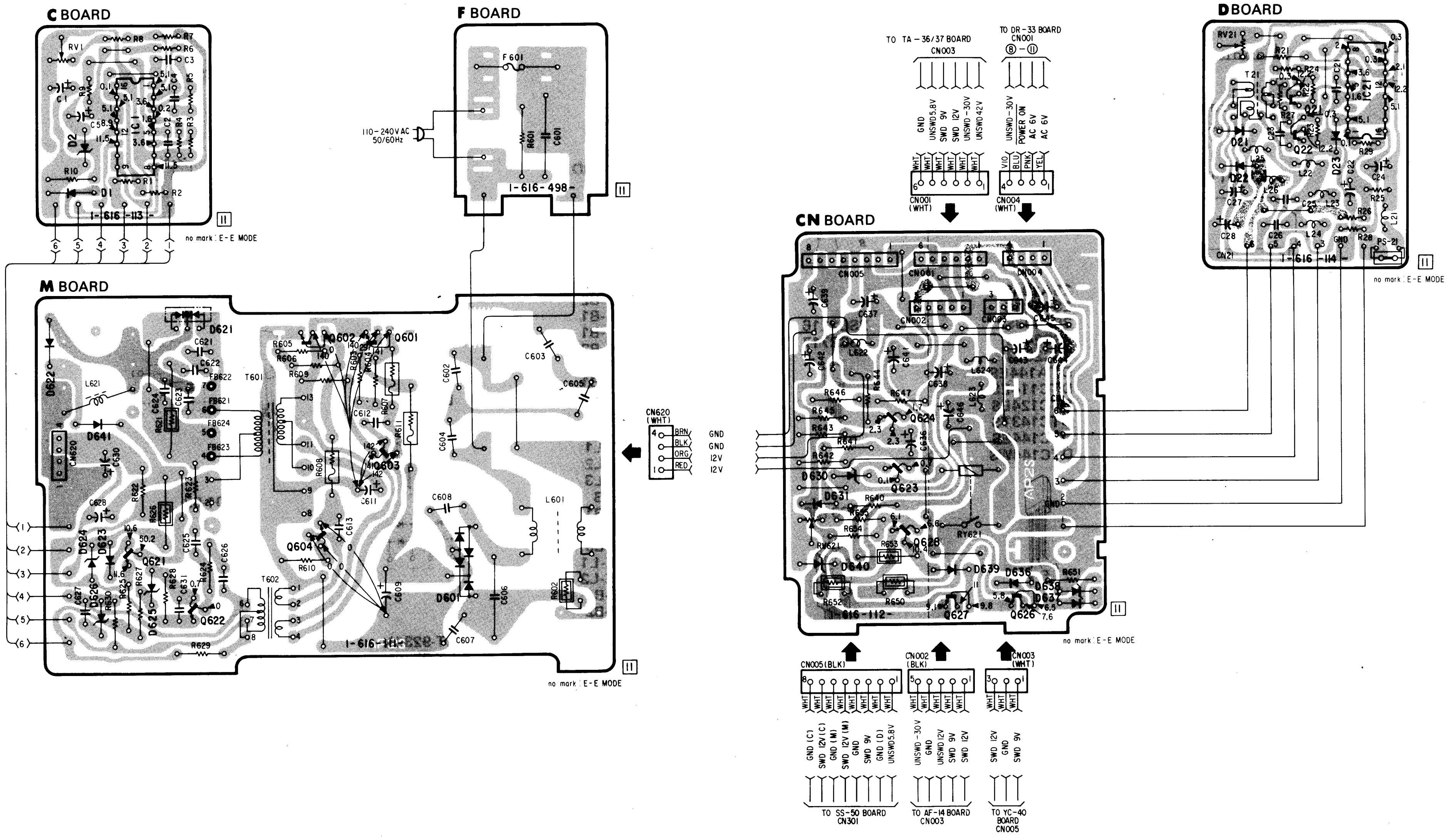
M (POWER), CN (POWER), C (POWER), D (POWER), F (POWER) PRINTED WIRING BOARDS

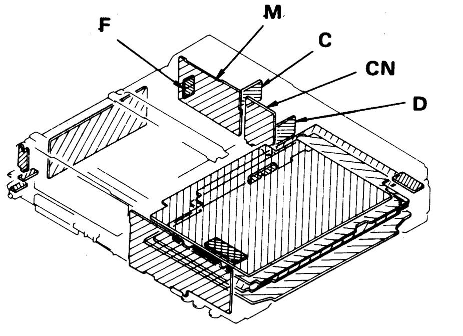
– Ref. No. M BOARD: 11,000 series, CN BOARD: 11,000 series, C BOARD: 11,000 series, D BOARD: 11,000 series, F BOARD: 11,000 series –

Note on Printed Wiring Board:

- ○— : Indicates a leadwire mounted on the component side.
- ●— : Indicates a leadwire mounted on the printed side.
- ░ : soldering side.
- ▨ : B+ pattern

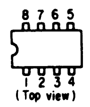
When indicating parts by reference number, please include the board name.


C BOARD
F BOARD
M BOARD
CN BOARD
D BOARD
1-616-113
1-616-498
1-616-111
1-616-112
1-616-114
F601
110-240V AC 50/60Hz
no mark : E-E MODE
TO TA-36/37 BOARD CN003
TO DR-33 BOARD CN001
GND
UNSWD5.8V
SWD 9V
SWD 12V
UNSWD-30V
UNSWD42V
UNSWD-30V
POWER ON
AC 6V
AC 6V
CN001 (WHT)
CN004 (WHT)
CN620 (WHT)
BRN GND
BLK GND
ORG 12V
RED 12V
CN005 (BLK)
GND (C)
SWD 12V (C)
GND (M)
SWD 12V (M)
GND
SWD 9V
GND (D)
UNSWD5.8V
TO SS-50 BOARD CN301
CN002 (BLK)
UNSWD-30V
GND
UNSWD 12V
SWD 9V
SWD 12V
TO AF-14 BOARD CN003
CN003 (WHT)
SWD 12V
GND
SWD 9V
TO YC-40 BOARD CN005

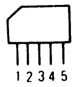


4-11. SEMICONDUCTORS

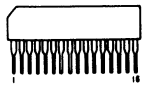
BA4558
HA17558
NJM4556D
NJM4558D
NJM4562D
µPC358C
µPC456C
µPC4558


8 7 6 5
1 2 3 4
(Top view)

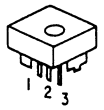
BA634
TA7060P



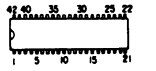
BA7007



BX1317

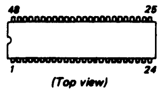


CX10021A-NP
CX10021A-P
CX10021B-NP
CX10021B-P
CX20097A
CX20105
M50160-115SP

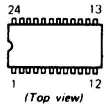

42 40 35 30 25 22
1 5 10 15 21

(Top view)

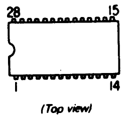
CX20043
CX20104
CX20124


48
25
1
24
(Top view)

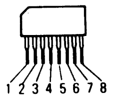
CX10023


24
13
1
12
(Top view)

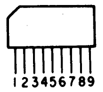
CX20045
CX20069
CX866A
CX866B
TDA3800GS
µPD7507SC-068


28
15
1
14
(Top view)

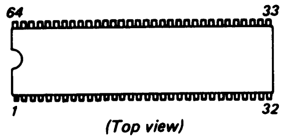
CX20061
CX7926
M54572L
µPC-1391H



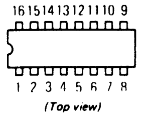
CX894
LA7205



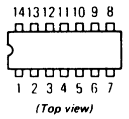
CXP5016-104S


64
33
1
32
(Top view)

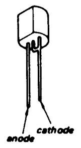
HD14053BP
M5T494P
MB3759
MB84051B
MB84053B
MB88201-191G
MC14538BCP
MSM6411B-19RS
SN74LS138N
TA7607AP
TC4051BP
TC4053BP
TK15052Z
µPD4051BC
µPD4053BC


16 15 14 13 12 11 10 9
1 2 3 4 5 6 7 8
(Top view)

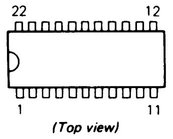
HD14066BP
IR3702
M58653P
MB3614
MB84013B
MB84066B
NJM2902N
TC4013BP
TC4066BP
TC504013BP
µPC324C
µPD4066BC


14 13 12 11 10 9 8
1 2 3 4 5 6 7
(Top view)

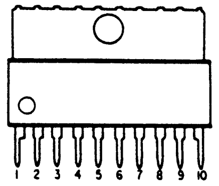
HZT33-02
µPC574J


cathode
anode

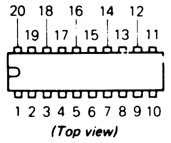
LA7091
MB89005-104


22
12
1
11
(Top view)

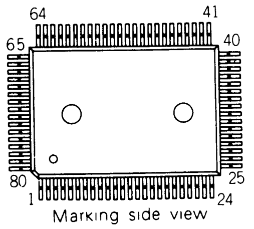
LB1640N


1 2 3 4 5 6 7 8 9 10

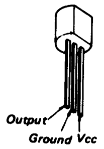
M50761-696P


20 18 16 14 12
19 17 15 13 11
1 2 3 4 5 6 7 8 9 10
(Top view)

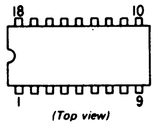
MB88551-173M


64
41
65
40
80
25
1
24
Marking side view

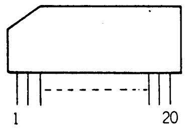
S-8054ALB


Output
Ground
Vcc

TDA2546A


18
10
1
9
(Top view)

TK15011Z



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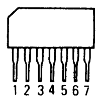

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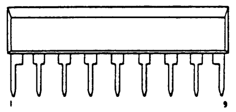

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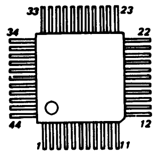
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23
34
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64
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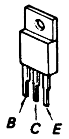
2SA473
2SB507HP
2SC1826
2SC2335
2SD313HP



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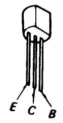
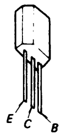
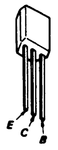
2SA933S
2SA1015
2SC1740S
2SC2001



2SA1026



2SA1048
2SA1115
2SC403SP
2SC2458
2SC2603
DTA144ES
DTC114ES
DTC124ES
DTC143TS
DTC144ES
DTC144WS



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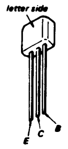
2SD1020


letter side
E C B

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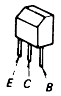
2SB734
2SD773
2SD774



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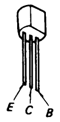
2SC1475
2SD667A
2SD788
2SD789



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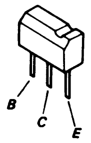

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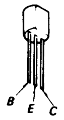

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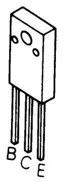

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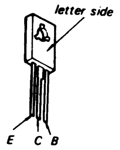
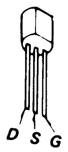

letter side
E C B

2SK152



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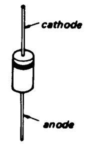
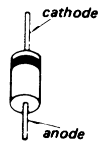
10E2
11E2
ERB12-01RK
ERB12-02
ERB12-02RK


cathode
anode

1S1555
1S2076
1S2076A
1S2473
1S2473T
EQA02-09D
HZ10E-B1
HZ11E-B2
HZ13E-B1
HZ33E-B1
HZ33E-B2
HZ33E-B3
HZ6C1
HZ6.2E-B2
HZ6.8E-B1
HZ7.5E-B1
HZ7.5E-B2
HZ7.5E-B3
HZ9.1E-B1
HZ9.1E-B2
RD10E-B1
RD11E-B2
RD13E-L1
RD13E-L2
RD13E-L3
RD15E-B
RD15E-B1
RD15E-B2
RD15E-B3
RD3.0E-L1
RD3.0E-L2
RD33E-B1
RD33E-B2
RD33E-B3
RD5.1E-B3
RD6.2E-B2
RD6.2E-L1
RD6.2E-L2
RD6.2E-L3
RD6.2E-N1
RD6.8E-B1
RD7.5E-B1
RD7.5E-B2
RD7.5E-B3
RD9.1E-B
RD9.1E-B1
RD9.1E-B2
RD9.1E-B3


cathode
anode

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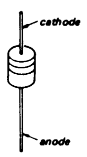
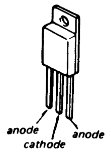
1SS133
1SS148

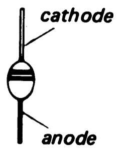

cathode
anode

EM1Z

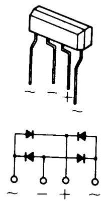
ESAC33-02CS


anode
cathode
anode

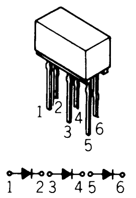
GP08D


cathode
anode

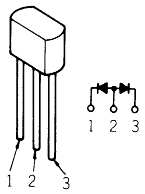
LB156



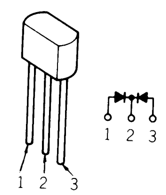
LT-9230N
LT-9230N2


1 2 3 4 5 6
1 2 3 4 5 6

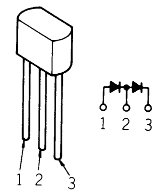
MC911



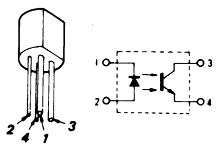
MC921



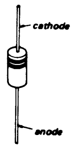
MC931



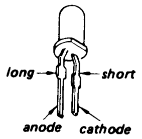
NJL5141E



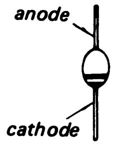
SIB01-02


cathode
anode

TLG123A
TL0123
TLR123
TLY123


long
short
anode
cathode

V09C
V09E
V09G


anode
cathode

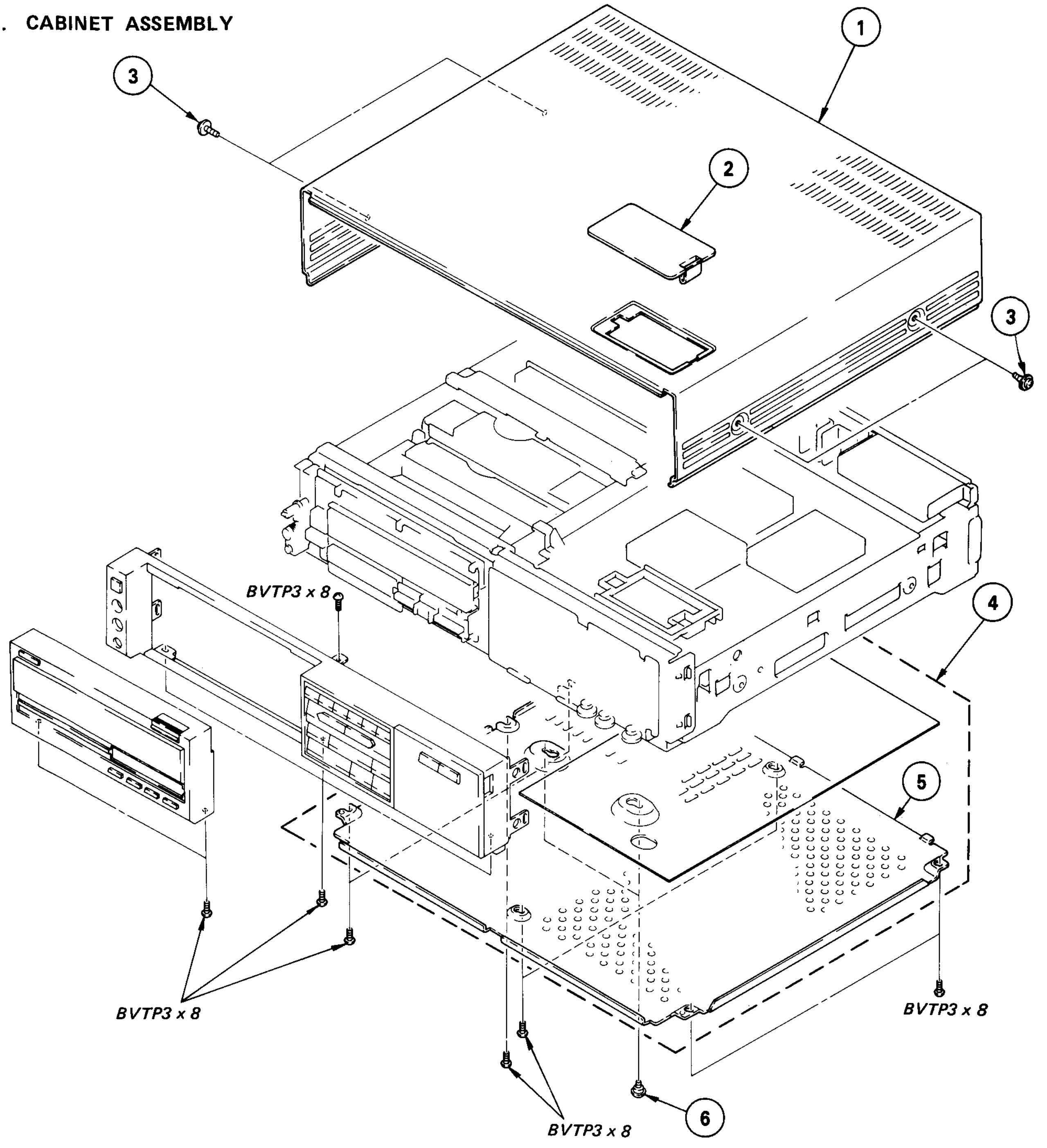
SECTION 5
EXPLODED VIEWS

NOTE:

- Itmes with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

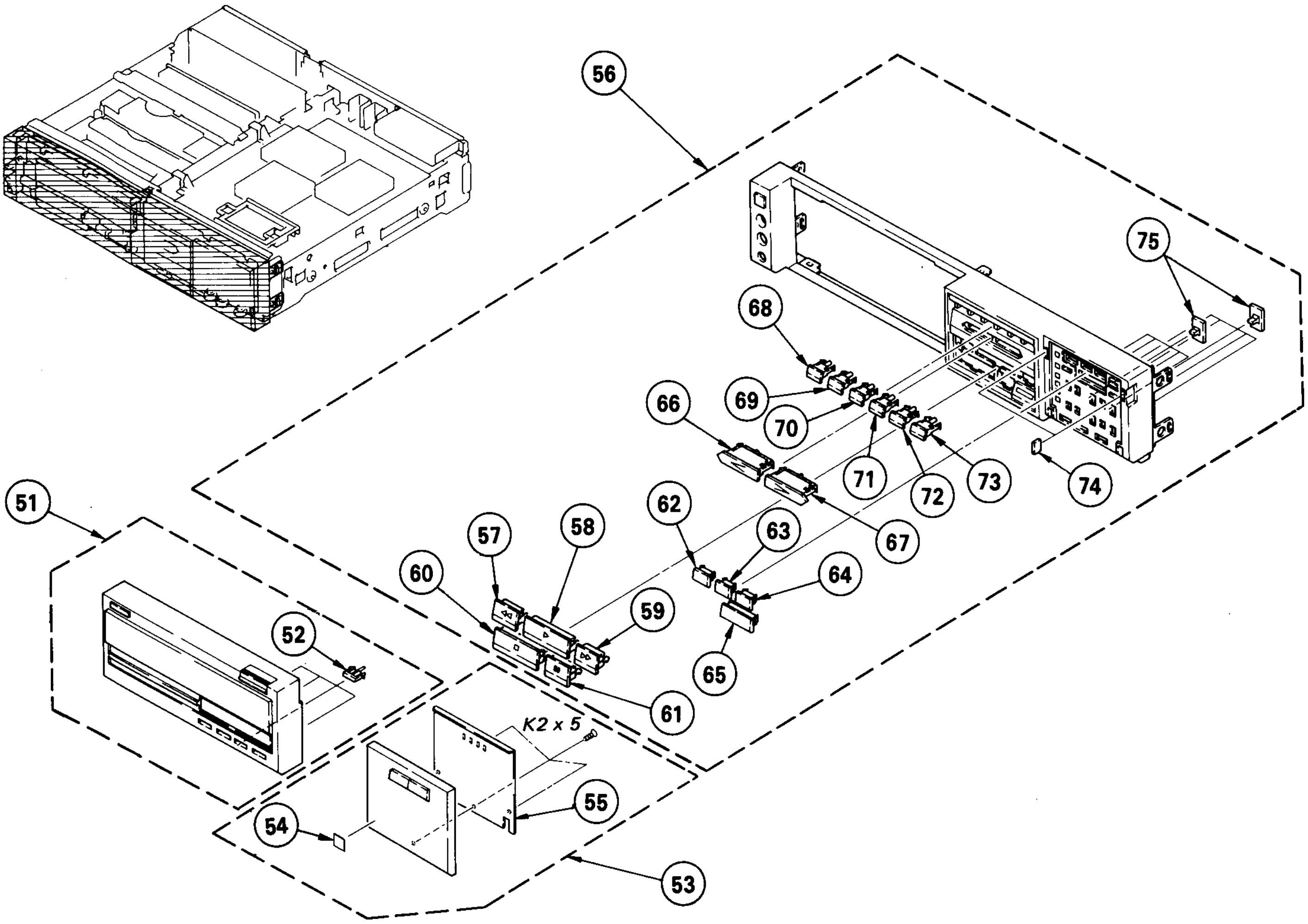
The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

5-1. CABINET ASSEMBLY



No.	Part No.	Description	Remark
1	X-3697-617-1	CASE ASSY, UPPER	
2	3-684-177-51	LID, PRESET	
3	4-886-821-01	SCREW, M3 CASE	
4	X-3697-618-1	PLATE ASSY, BOTTOM	5
5	*3-697-645-01	PLATE, BOTTOM	
6	3-696-537-01	SCREW, FIXED, TRANSPORT	

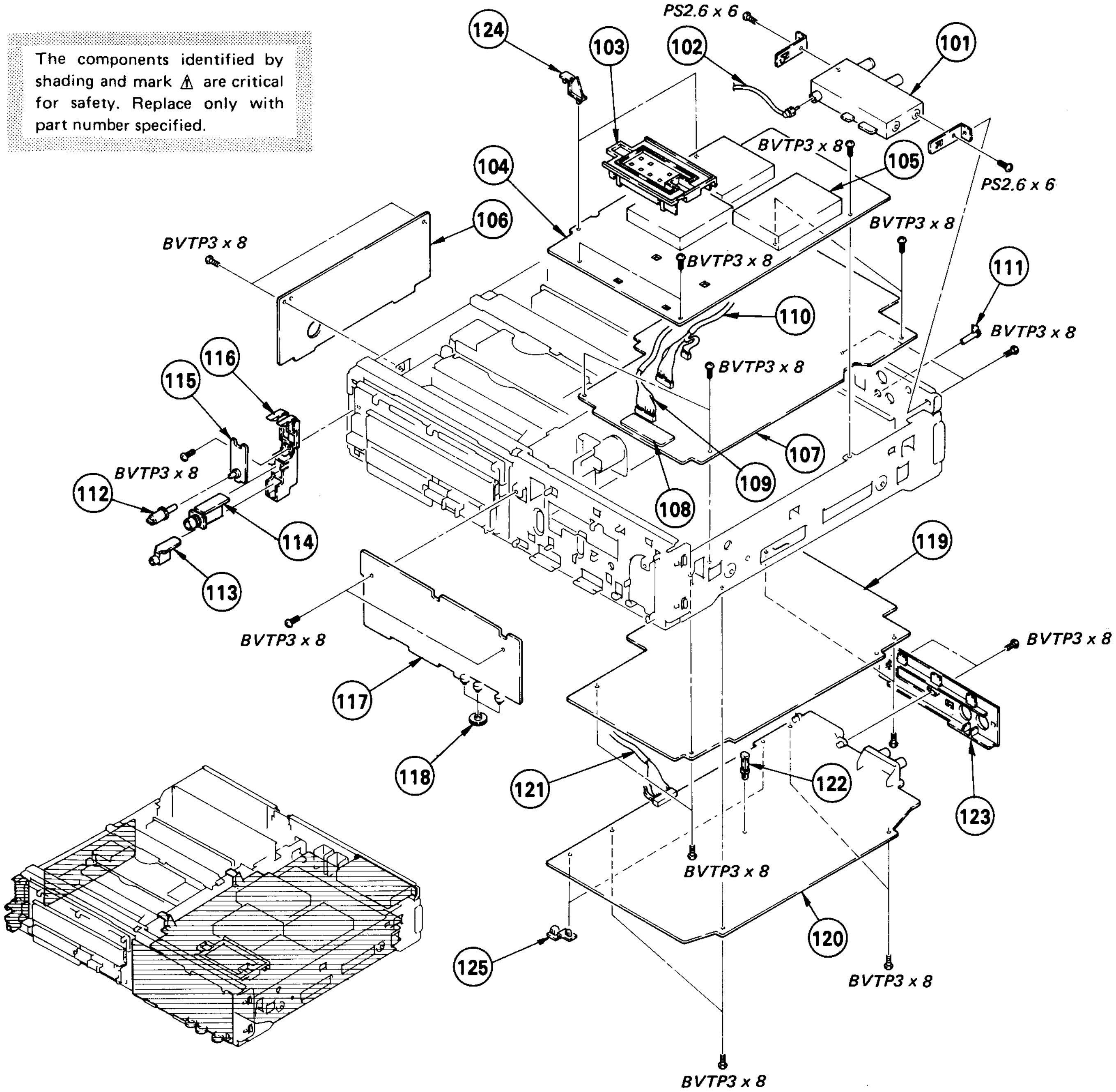
5-2. FRONT PANEL ASSEMBLY



No.	Part No.	Description	Remark
51	X-3697-607-1	PANEL ASSY, LS FRONT (ES MODEL)	52
	X-3697-613-1	PANEL ASSY, LS FRONT (E MODEL)	52
52	3-697-601-01	BUTTON, TV/VTR	
53	X-3697-603-1	DOOR ASSY, FRONT	54, 55
54	3-703-713-41	STICKER, SONY SYMBOL (10)	
55	3-697-671-01	PLATE, ORNAMENTAL, DOOR	
56	X-3697-608-1	PANEL ASSY, FRONT	57-75
57	3-696-454-11	BUTTON (REW), CONTROL	
58	3-696-455-11	BUTTON (PLAY), CONTROL	
59	3-696-457-11	BUTTON (FF), CONTROL	
60	3-696-456-11	BUTTON (STOP), CONTROL	
61	3-696-458-11	BUTTON (PAUSE), CONTROL	
62	3-697-618-01	BUTTON, TIMER	
63	3-697-618-21	BUTTON, TIMER	
64	3-697-618-11	BUTTON, TIMER	
65	3-697-617-01	BUTTON, NEXT	
66	3-697-613-01	BUTTON (LEFT)	
67	3-697-619-01	BUTTON (RIGHT)	
68	3-697-620-01	BUTTON, MODE	
69	3-697-620-11	BUTTON, MODE	
70	3-697-620-21	BUTTON, MODE	
71	3-697-620-31	BUTTON, MODE	
72	3-697-620-41	BUTTON, MODE	
73	3-697-620-51	BUTTON, MODE	
74	3-684-461-01	MAGNET, POCKET LOCK	
75	3-697-616-01	KNOB (A), SLIDE	

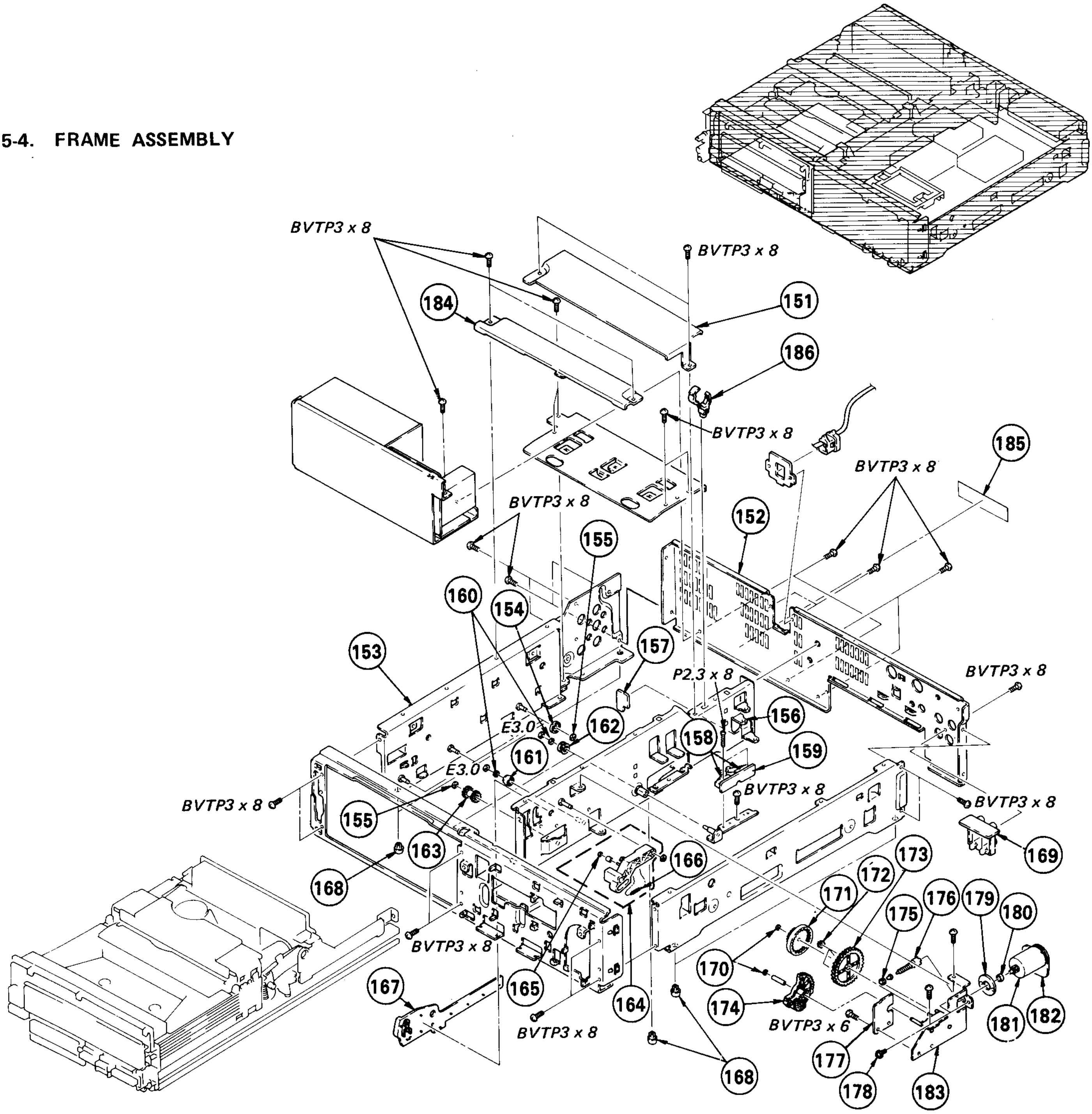
5-3. MAIN BOARD ASSEMBLY

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.


124
103
102
PS2.6 x 6
101
BVTP3 x 8
105
PS2.6 x 6
104
106
BVTP3 x 8
BVTP3 x 8
BVTP3 x 8
111
110
BVTP3 x 8
BVTP3 x 8
116
115
107
BVTP3 x 8
109
112
108
114
119
113
BVTP3 x 8
BVTP3 x 8
117
118
121
122
123
BVTP3 x 8
120
125
BVTP3 x 8
BVTP3 x 8

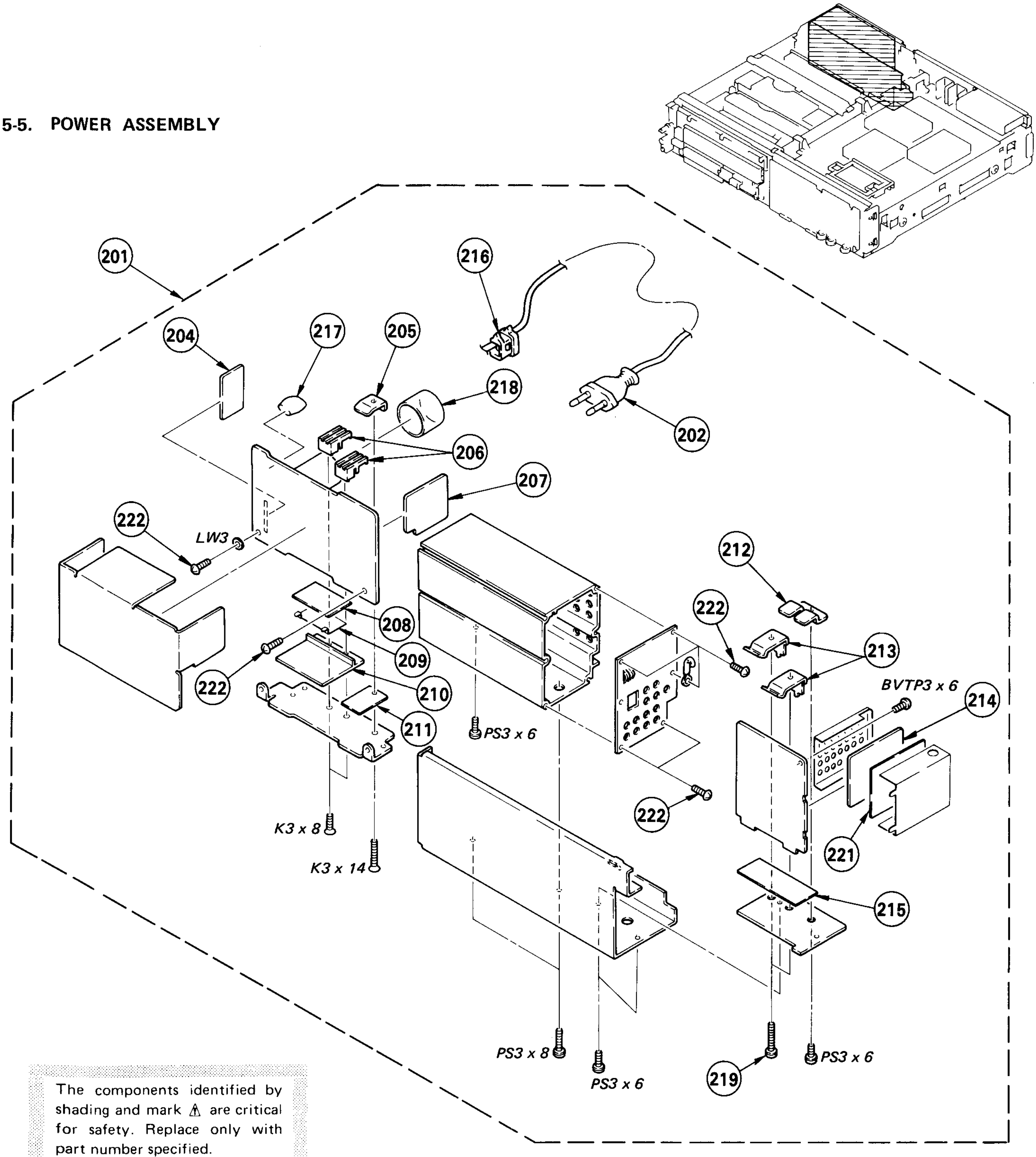
No.	Part No.	Description	Remark
101	⚠.1-464-479-11	BOOSTER MIXER, RF MODULATOR (ES MODEL)	
	⚠.1-464-386-11	BOOSTER MIXER, RF MODULATOR (E MODEL)	
102	*1-555-110-00	CABLE, PIN	
103	X-3697-601-1	COVER ASSY, PRESET	
104	*A-6721-248-A	TA-36 BOARD, COMPLETE (ES MODEL)	
	*A-6721-258-A	TA-37 BOARD, COMPLETE (E MODEL)	
105	⚠.1-463-577-31	TUNER, ET (BT-883AD) (ES MODEL)	
	⚠.1-463-584-21	TUNER, ET (BT-881AD) (E MODEL)	
106	*A-6711-660-A	DH-4 BOARD, COMPLETE	
107	*A-6715-272-A	SS-50 BOARD, COMPLETE	108
108	*1-617-383-11	QV-1 BOARD	
109	*1-936-804-11	HARNESS (SD-13)	
110	*1-936-805-11	HARNESS (SD-12)	
111	3-670-149-00	KNOB, V SYNCHRONOUS	
112	3-696-103-01	KNOB, HP	
113	*1-617-043-11	MC-10 BOARD	
114	*1-617-042-11	HP-18 BOARD	
115	*1-617-041-11	PW-15 BOARD	
116	*3-697-653-01	HOLDER, JACK	
117	*A-6725-469-A	FR-20 BOARD, COMPLETE	
118	3-697-622-01	KNOB, TRACKING	
119	*A-6713-237-A	B-697 BOARD, COMPLETE (AF-14)	
120	*A-6711-658-A	YC-40 BOARD, COMPLETE (ES MODEL)	
	*A-6711-698-A	YC-40 BOARD, COMPLETE (E MODEL)	
121	*1-936-802-11	HARNESS (YP-3)	
122	*3-669-610-00	SPACER	
123	*3-697-630-01	PANEL, CONNECTOR	
124	*3-697-709-01	HING, PCB (T)	
125	*3-697-710-01	HING, PCB (Y)	

5-4. FRAME ASSEMBLY


BVTP3 x 8
BVTP3 x 8
184
151
186
BVTP3 x 8
185
BVTP3 x 8
BVTP3 x 8
152
155
160
154
153
157
P2.3 x 8
156
E3.0
162
161
E3.0
158
159
BVTP3 x 8
BVTP3 x 8
BVTP3 x 8
BVTP3 x 8
155
163
168
166
169
173
172
171
176
179
180
175
BVTP3 x 8
167
165
164
170
174
BVTP3 x 6
181
182
BVTP3 x 8
177
178
183
168

No.	Part No.	Description	Remark
151	*3-697-628-01	RETAINER, HARNESS, MOVABLE	
152	*3-697-634-01	FRAME (REAR)	
153	*X-3697-605-1	FRAME (LEFT) ASSY	
154	3-696-494-01	ROLLER (LEFT), LS	
155	3-696-510-01	WASHER (3), STOPPER	
156	*X-3697-606-1	FRAME (INNER) ASSY	
157	*3-697-679-01	CUSHION, LS	
158	1-570-424-11	SWITCH, MICRO (MS 1, 2)	
159	*1-616-602-11	PC BOARD, OC-1	
160	3-701-441-11	WASHER	
161	3-696-501-01	ROLLER (RIGHT) (B), LS	
162	3-696-492-01	ROLLER (RIGHT), LS	
163	3-696-574-01	GEAR (B), LS DRIVE	
164	*A-6751-250-A	ARM BLOCK ASSY, U/D	165, 166
165	3-669-465-00	WASHER (1.5), STOPPER	
166	3-696-410-01	SPRING, TENSION	
167	*3-696-425-02	GUIDE (LS)	
168	3-670-155-11	LEG	
169	*1-617-034-11	PJ-3 BOARD	
170	3-669-595-00	WASHER (2), STOPPER	
171	3-696-573-01	GEAR (LS) (B), INT TOOTH	
172	*3-696-497-01	GEAR (LS), PLANET	
173	*X-3696-302-3	GEAR ASSY, INPUT	
174	X-3697-609-2	GEAR ASSY, U/D	
175	*3-696-389-01	BUSHING, RUBBER	
176	*3-696-319-01	GEAR (LS), WORM	
177	*1-616-598-11	US-1 BOARD	
178	3-696-518-01	SCREW (M2.6X4), W (+) P	
179	3-696-390-01	MOTOR (MOUNT)	
180	3-696-388-01	RUBBER, JOINT	
181	X-3696-306-1	MOTOR ASSY, DC (SKATE MOTOR) M905	
182	*1-616-600-11	LS-11 BOARD	
183	*X-3696-340-1	BASE ASSY, GEAR	
184	*3-697-629-01	STAY (UPPER)	
185	*3-697-688-01	LABEL, MODEL NUMBER (NO.1) (ES MODEL)	
185	*3-697-690-01	LABEL, MODEL NUMBER (NO.1) (E MODEL)	
186	*3-697-707-01	CLAMP, HARNESS	

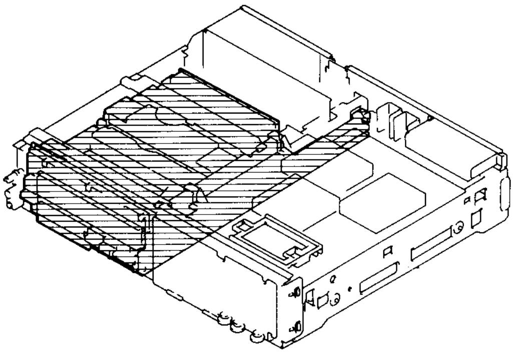
5-5. POWER ASSEMBLY

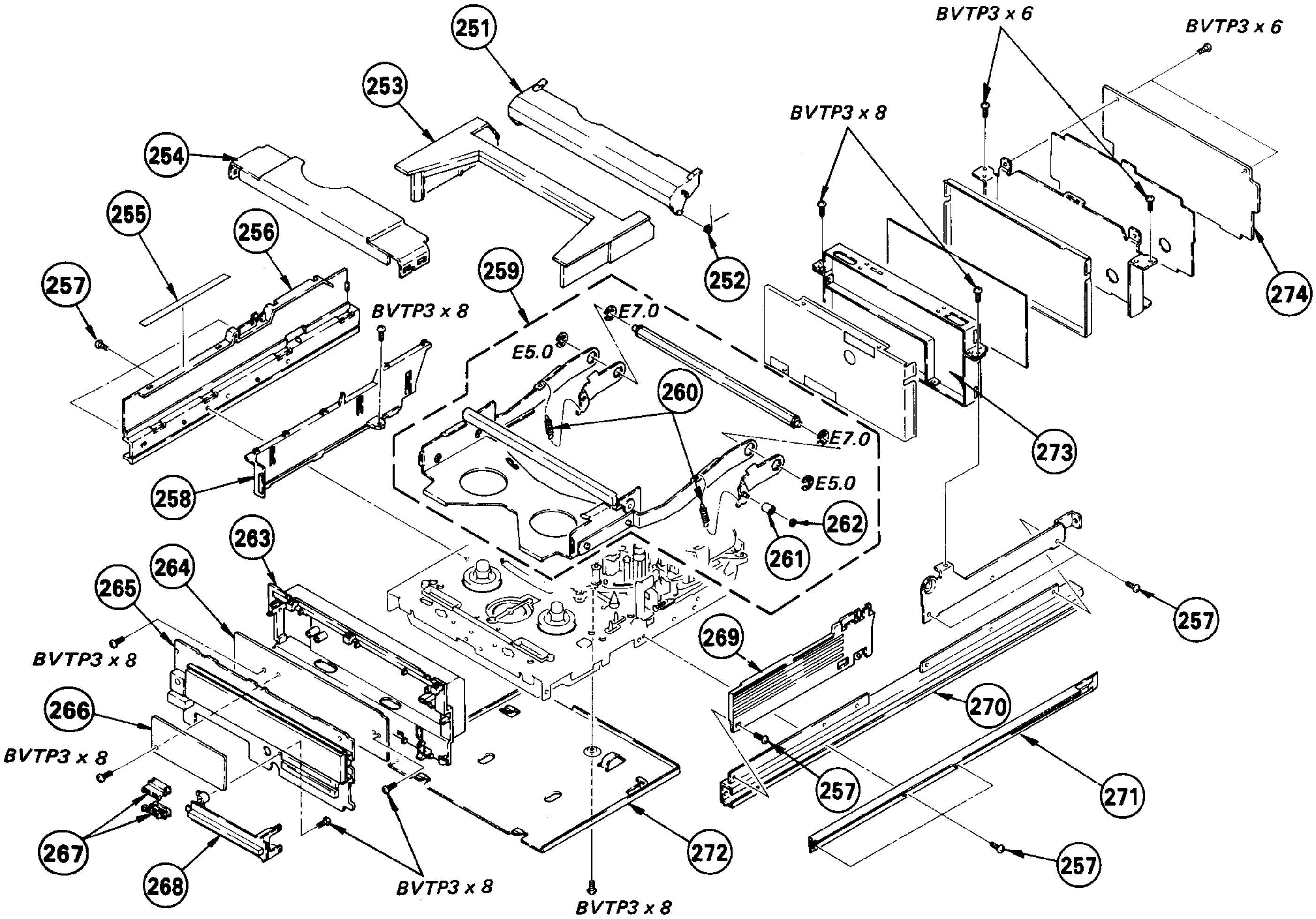

201
216
204
217
205
218
202
206
207
222
LW3
212
222
208
213
209
222
210
BVTP3 x 6
214
211
PS3 x 6
222
221
K3 x 8
K3 x 14
215
PS3 x 8
PS3 x 6
219
PS3 x 6

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remark
201	⚠ 1-413-229-11	REGULATOR, SWITCHING (SR-21E)	202-222
202	⚠.1-534-817-31	CORD, POWER	
204	⚠*.1-616-498-11	F BOARD	
205	*2-434-043-01	RETAINER, DIODE DP-SR17	
206	⚠*.2-431-517-01	RETAINER, TRANSISTOR (TP-CR35)	
207	*1-616-113-11	C BOARD	
208	⚠.2-431-531-01	RUBBER, INSULATING STB-SR21	
209	*2-434-230-01	BRACKET SP-CR35	
210	⚠.2-431-530-01	RUBBER, INSULATING STA-SR21	
211	2-431-515-01	RUBBER, HEATSHINK STB-CR35	
212	*2-434-240-01	BRACKET (DP-SR21)	
213	*2-434-238-01	BRACKET (RP-SR21)	
214	*1-616-114-11	D BOARD	
215	2-431-532-01	RUBBER, INSULATING	
216	⚠.3-703-244-02	CLAMPER, CORD	
217	⚠.4-374-846-11	COVER, CAPACITOR, CAP TYPE	
218	⚠.2-431-533-01	COVER, CAPACITOR	
219	2-434-060-01	SCREW +M 3X18	
221	*2-431-535-01	SHEET, INSULATING	
222	2-434-241-01	SCREW +B 3X8	

5-6. LS ASSEMBLY

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BVTP3 x 6
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BVTP3 x 8
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BVTP3 x 8
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BVTP3 x 8
BVTP3 x 8
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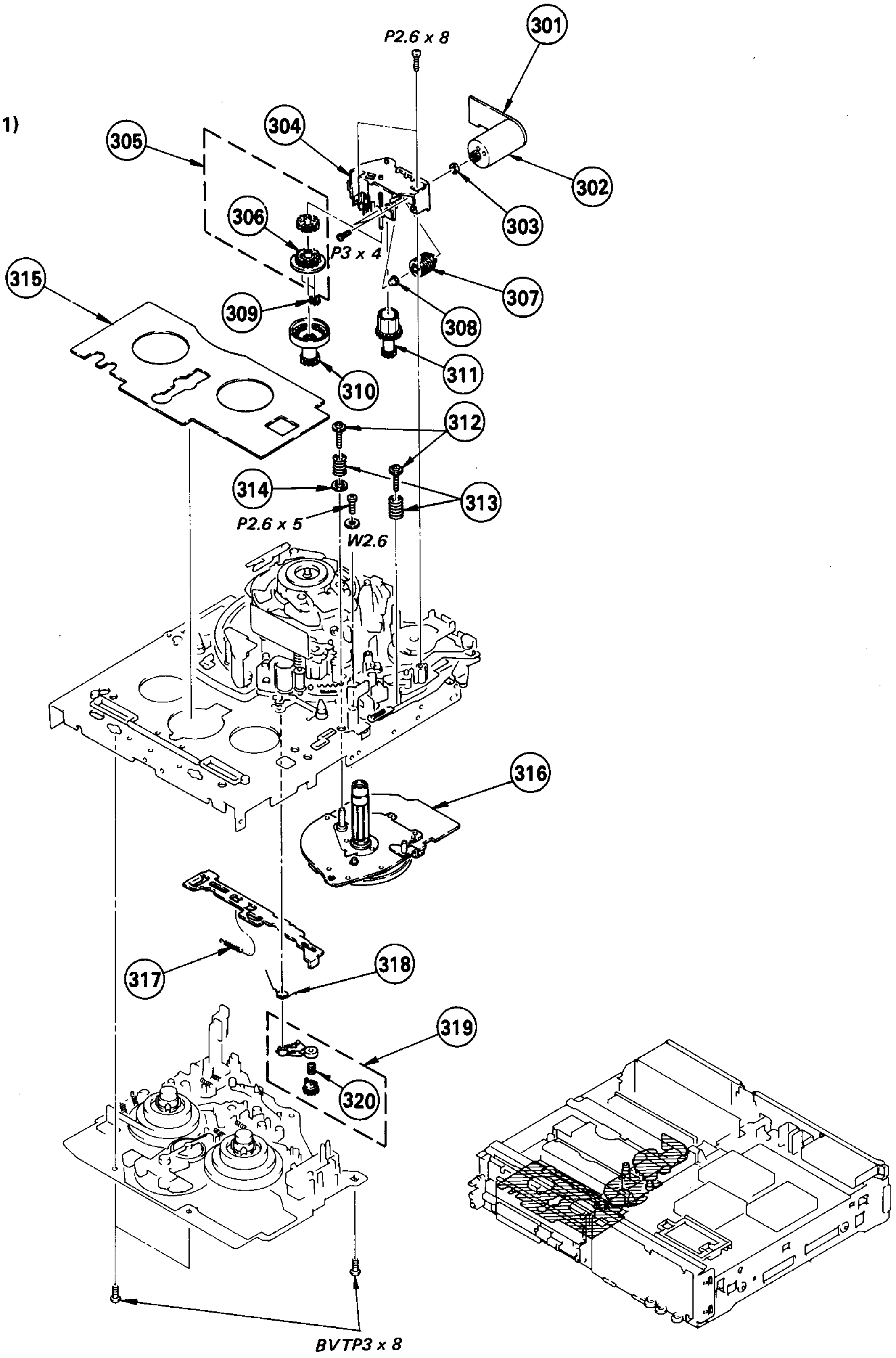
No.	Part No.	Description	Remark
251	3-696-418-03	COVER, M, TRAY	
252	3-696-362-01	SPRING	
253	*3-696-472-01	COVER, TRAY	
254	X-3697-602-1	COVER ASSY, DRUM	
255	3-696-575-01	COVER, EDGE, RAIL (LEFT)	
256	*3-696-461-01	RAIL (LEFT)	
257	3-696-519-01	SCREW (3X8), (+) P IT3	
258	*3-696-476-01	WALL, INSIDE, LEFT	
259	*A-6751-247-A	TRAY BLOCK ASSY	260-262
260	3-639-333-01	SPRING, TENSION	
261	*3-696-493-01	ROLLER, LOCK	
262	3-590-523-00	WASHER, STOPPER	
263	3-697-635-01	PANEL, REAR, LS	
264	*A-6724-467-A	FL-9 BOARD, COMPLETE	
265	*A-6724-466-A	FL-8 BOARD, COMPLETE	
266	1-520-485-11	METER UNIT, LEVEL	
267	3-697-625-01	KNOB, REC-VR	
268	3-697-636-01	SCALE, DIAL, REC VOLUME	
269	*3-696-473-02	WALL (R), SIDE	
270	*3-696-462-01	RAIL (RIGHT)	
271	*3-696-465-02	RACK, LS	
272	*X-3696-342-1	PLATE ASSY, BOTTOM, LS	
273	*A-6711-659-A	RP-31 BOARD, COMPLETE	
274	*A-6717-408-A	DR-33 BOARD, COMPLETE	

5-7. CHASSIS ASSEMBLY (1)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P2.6 x 5
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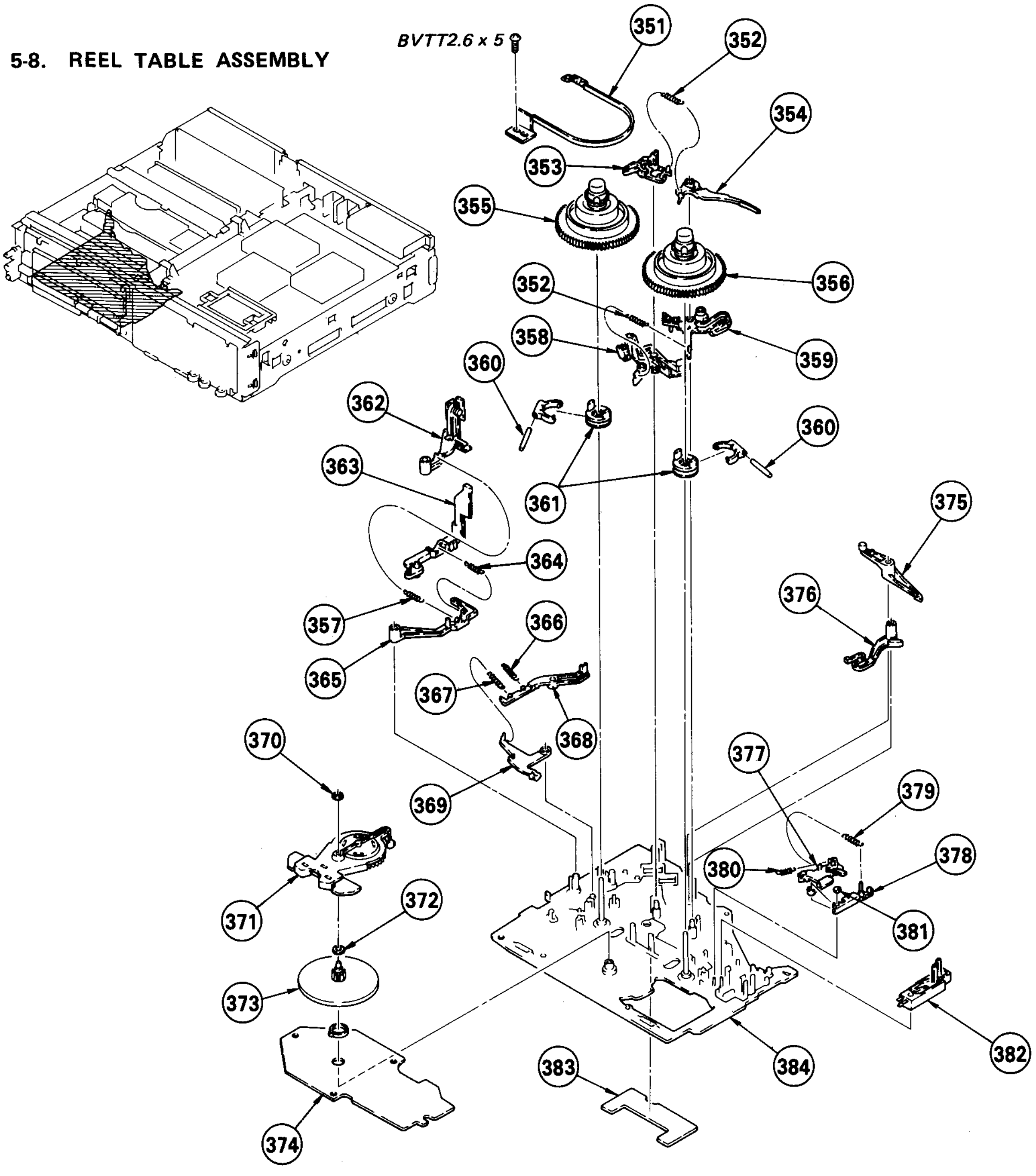
BVTP3 x 8

No.	Part No.	Description	Remark
301	*1-616-601-11	LM-17 BOARD	
302	X-3696-314-1	MOTOR ASSY, L (LOADING MOTOR) M904	
303	3-696-388-01	RUBBER, JOINT	
304	X-3696-330-3	BRACKET ASSY	
305	X-3696-307-1	WHEEL ASSY, WORM	306
306	X-3696-322-1	GEAR ASSY, PLANET	
307	3-696-302-01	GEAR, WORM	
308	3-696-304-01	BEARING, WORM	
309	3-696-325-01	GEAR, PLANET	
310	X-3696-308-1	GEAR ASSY, INNER	
311	X-3696-321-1	GEAR ASSY, RELAY	
312	3-669-633-00	SCREW, + PW2	
313	3-679-359-00	SPRING, COMPRESSION	
314	3-693-831-01	WASHER, GUIDE	
315	3-696-527-01	COVER, MECHANICAL CHASSIS	
316	8-838-096-01	MOTOR, DC (BHF-1914A)(CAPSTAN MOTOR)M902	
317	3-696-345-01	SPRING (SLIDE PLATE), TENSION	
318	3-696-385-01	SPRING, TORSION (REVIEW BRAKE)	
319	X-3691-648-1	ARM ASSY (B), REVIEW BRAKE	320
320	3-691-792-01	SPRING, COMPRESSION	

5-8. REEL TABLE ASSEMBLY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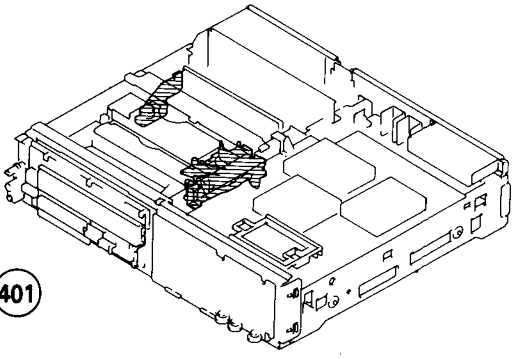
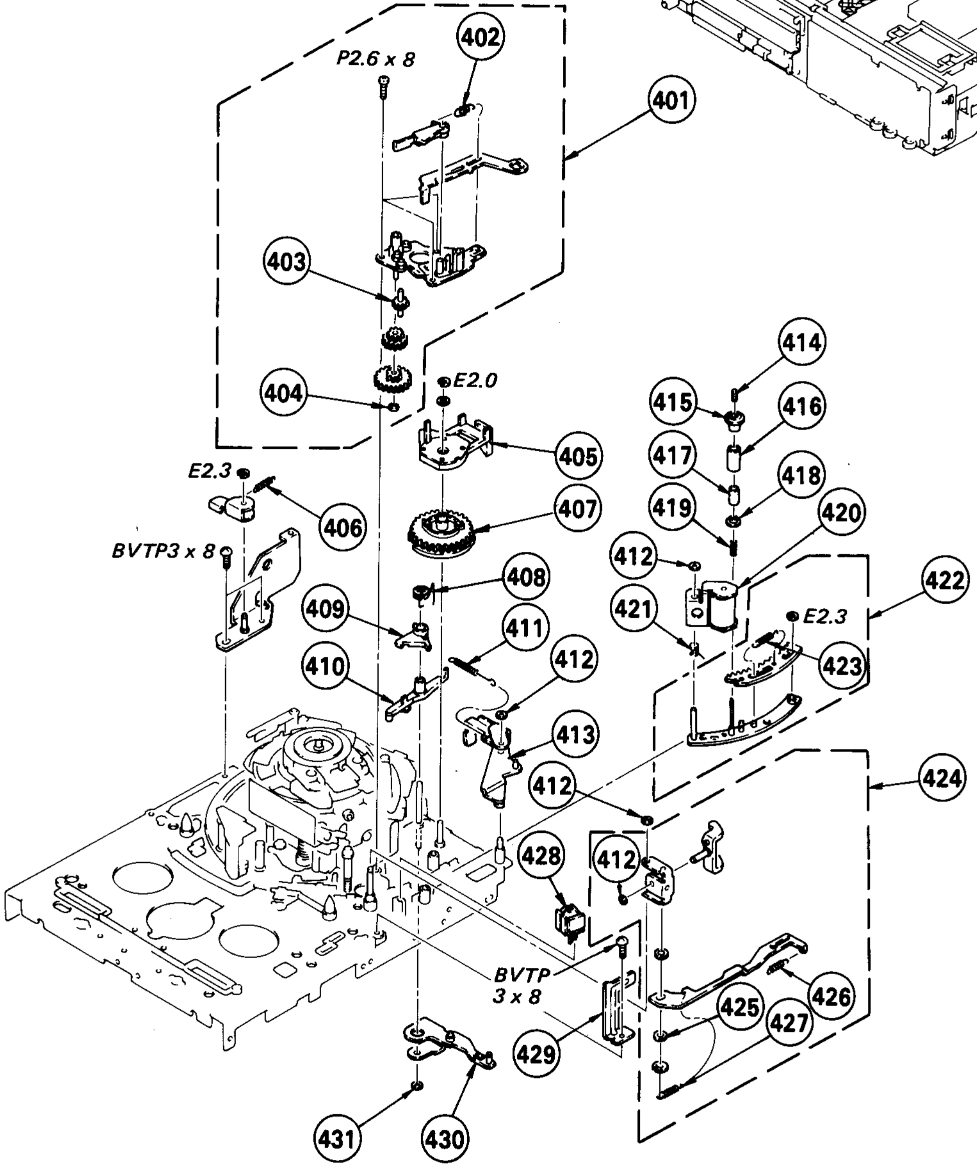
No.	Part No.	Description	Remark
351	X-3679-120-0	BAND ASSY, TENSION REGULATOR	
352	3-696-395-01	SPRING, TENSION	
353	*3-696-436-01	ARM, S SOFT BRAKE	
354	X-3684-137-1	BRAKE ASSY, T SOFT	
355	X-3691-627-1	TABLE ASSY, REEL, SUPPLY	
356	X-3691-626-1	TABLE ASSY, REEL, TAKE-UP	
357	3-684-235-01	SPRING, TENSION	
358	X-3696-310-1	BRAKE ASSY, S	
359	X-3696-311-1	BRAKE ASSY, T	
360	*3-691-681-01	SHAFT, ARM, UD	
361	*3-696-386-01	RING, UD	
362	1-464-527-13	S COIL SENSOR	
363	X-3696-312-1	LEVER ASSY, TENSION REGULATOR	
364	3-696-396-01	SPRING, TENSION	
365	*3-696-435-01	LEVER, FUNCTION	
366	3-696-394-01	SPRING, TENSION	
367	3-691-776-01	SPRING, TENSION	
368	*3-696-478-01	DETECTOR, S CLUTCH	
369	*3-696-437-01	LEVER, S LIMITER	
370	3-669-595-00	WASHER (2), STOPPER	
371	A-6759-074-A	ARM BLOCK ASSY, PENDULUM	
372	3-679-318-00	WASHER, PENDULUM ARM	
373	X-2622-205-1	ROTOR ASSY, R	
374	*A-4910-063-A	R STATOR (REEL MOTOR) BOARD, COMPLETE	
375	X-3696-315-1	SENSOR ASSY, RING	
376	3-696-438-01	ARM, PENDULUM STOPPER	
377	*3-691-728-01	LEVER, RD	
378	*X-3691-601-3	ARM ASSY, RD	
379	3-696-398-01	SPRING, TENSION	
380	3-696-397-01	SPRING, TENSION	
381	3-691-680-01	WASHER, STOPPER	
382	1-554-839-11	SWITCH, LEAF (2 GANG) (REC PROOF, CASSETT IN) S901	
383	*1-616-599-11	RD-17 BOARD	
384	*X-3696-336-3	CHASSIS ASSY, SUB	

5-9. CHASSIS ASSEMBLY (2)

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BVTP
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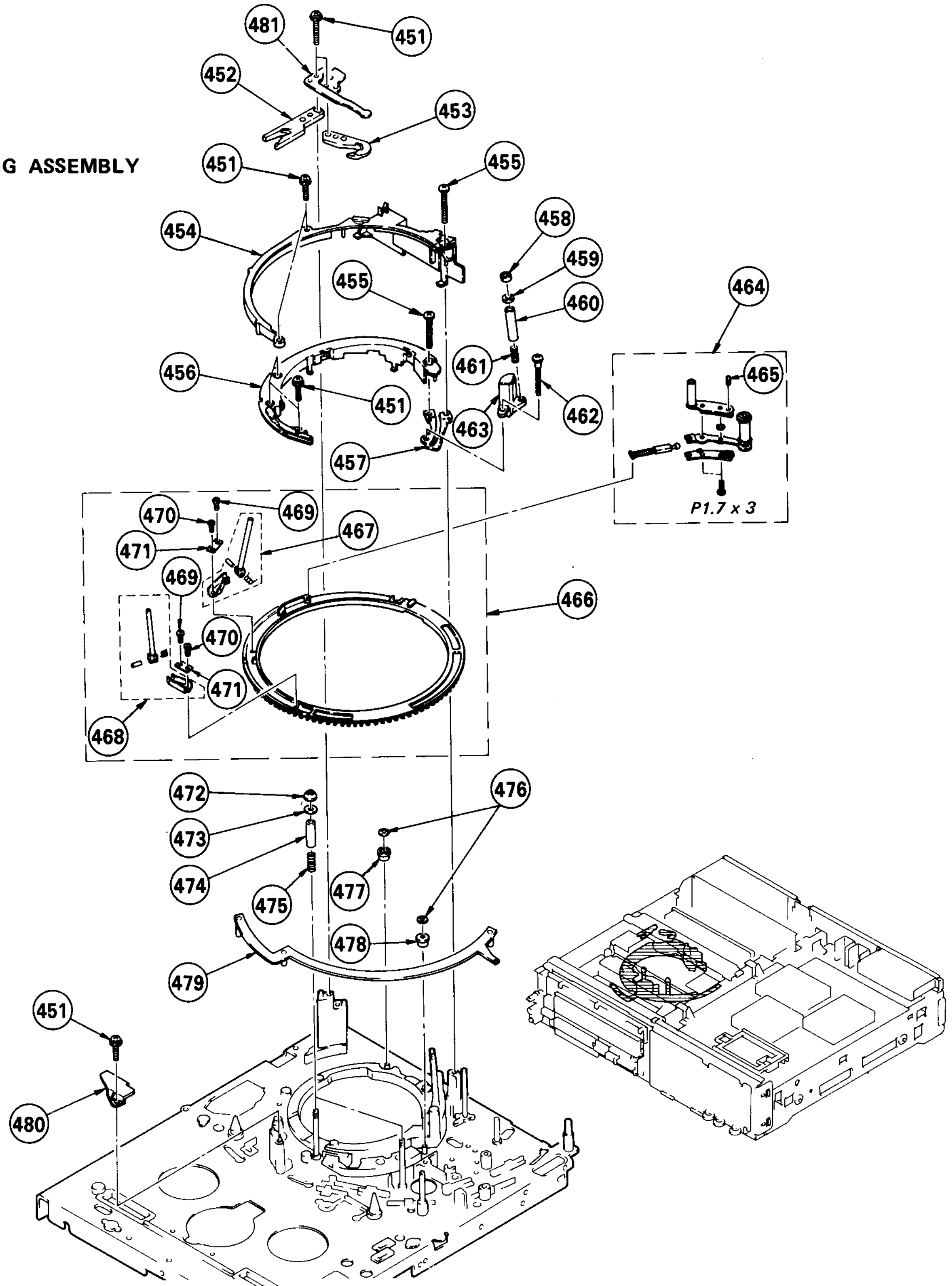
No.	Part No.	Description	Remark
401	A-6750-190-A	CHASSIS BLOCK ASSY, GEAR	402-404
402	3-696-376-01	SPRING, TENSION (FLAG)	
403	X-3679-148-0	GEAR (F) ASSY (D)	
404	3-669-465-00	WASHER (1.5), STOPPER	
405	1-570-394-21	SWITCH, ROTARY (ROTARY ENCODER) S902	
406	3-140-263-XX	SPRING, TENSION	
407	3-696-509-01	CAM (S), FUNCTION	
408	3-696-343-01	SPRING	
409	3-696-337-01	INVERTOR, LOCK ARM	
410	X-3696-319-1	ARM ASSY, LOCK	
411	3-696-344-01	SPRING (EJECT), TENSION	
412	3-669-596-00	WASHER (2.3), STOPPER	
413	X-3696-328-1	STOPPER ASSY, EJECT	
414	3-694-230-01	SCREW (2X2.5), FLANGE	
415	3-676-650-00	FLANGE (UPPER) (#9), GUIDE	
416	3-676-649-11	ROLLER (#9), GUIDE	
417	3-672-559-00	SLEEVE, GUIDE	
418	3-669-432-00	FLANGE (LOWER) (#9), GUIDE	
419	3-669-452-00	SPRING, COMPRESSION	
420	X-3691-646-1	ARM ASSY, PINCH ROLLER	
421	3-696-406-01	SPRING (CAM)	
422	X-3696-329-1	GEAR ASSY, SLIDER	423
423	3-549-014-00	SPRING, TENSION	
424	A-6759-255-A	ARM BLOCK ASSY, PRESS	412, 425-427
425	3-679-318-11	WASHER, PENDULUM ARM	
426	3-696-374-01	SPRING, TENSION(F PLATE RETURN)	
427	3-696-375-01	SPRING, TENSION (PRESS ARM)	
428	1-464-526-12	T COIL SENSOR	
429	*3-696-328-01	PLATE, LID OPEN	
430	*X-3696-309-1	LEVER ASSY, CAM	
431	3-669-595-00	WASHER (2), STOPPER	

5-10. S LOADING ASSEMBLY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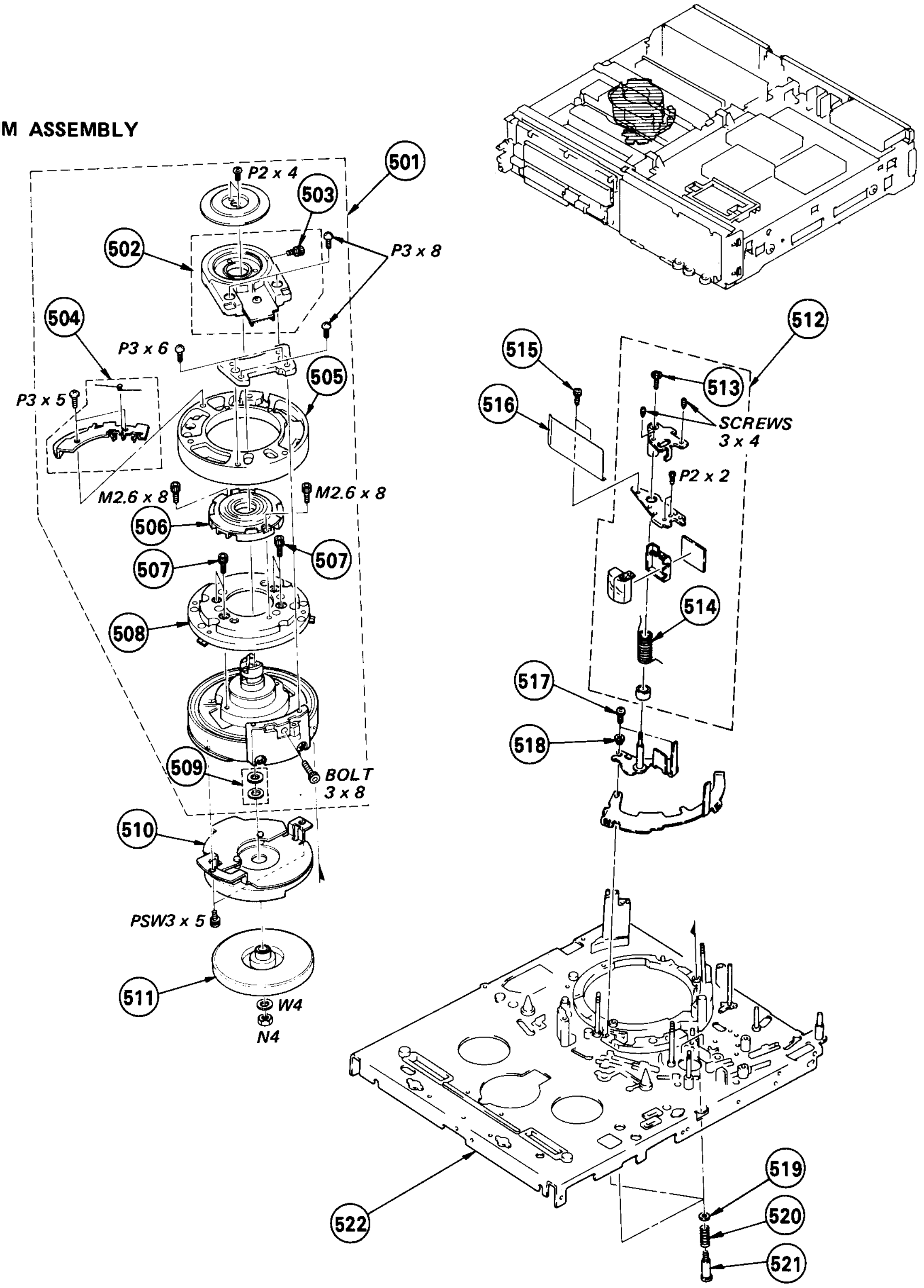
No.	Part No.	Description	Remark
451	3-669-480-11	+ PTPWH 2	
452	*3-669-618-00	PLATE (2), ADJUST	
453	*3-672-507-00	PLATE (3-1), ADJUSTMENT	
454	3-684-217-04	GUIDE (2), SHUTTLE	
455	3-669-466-21	SCREW (M 2.6)	
456	*3-679-290-00	GUIDE (1-YA), SHUTTLE	
457	*X-3679-263-1	BASE ASSY, SLANT	
458	3-669-446-00	NUT, GUIDE, NO. 6	
459	3-679-910-00	FLANGE (S), GUIDE, NUMBER 6	
460	3-691-830-01	SLEEVE, GUIDE, #6	
461	3-669-615-00	SPRING, COMPRESSION	
462	3-669-606-00	SCREW (2.6)	
463	8-825-508-10	HEAD, FE	
464	A-6750-108-B	SHUTTLE (2) BLOCK ASSY	465
465	3-694-230-01	SCREW (2X2.5), FLANGE	
466	X-3696-337-1	RING (CAM) ASSY, S THREADING	467-470
467	*X-3669-430-0	HOLDER BLOCK ASSY, #3 GUIDE	
468	*X-3669-429-0	HOLDER BLOCK ASSY, #2 GUIDE	
469	3-669-478-00	SCREW (1X3), TAPPING	
470	3-672-586-00	SCREW (1.4X3), TAPPING	
471	*3-669-472-02	RETAINER, SPRING, LEAF	
472	3-669-318-21	NUT, ADJUSTMENT, GUIDE	
473	3-684-135-01	WASHER (UPPER), GUIDE, #7, 8	
474	3-684-133-01	SLEEVE, GUIDE, #7, 8	
475	3-684-290-01	SPRING, COMPRESSION	
476	3-669-465-00	WASHER (1.5), STOPPER	
477	3-669-360-00	ROLLER, RING	
478	3-669-597-00	ROLLER (B), RING	
479	*X-3696-327-1	PLATE ASSY, FUNCTION	
480	3-669-476-04	PLATE, GUIDE	
481	*3-684-158-01	PLATE, GROUND, TAPE GUIDE	

5-11. DRUM ASSEMBLY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P3 x 8
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P3 x 6
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P3 x 5
M2.6 x 8
M2.6 x 8
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BOLT
3 x 8
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PSW3 x 5
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SCREWS
3 x 4
P2 x 2
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No.	Part No.	Description	Remark
501	A-6050-387-A	DRUM ASSY (DSH-78A-R)	502-509
502	A-6050-237-C	GUIDE ARM ASSY	503
503	3-681-360-01	SCREW, SPRING WASHER	
504	A-6760-066-B	SPRING ASSY, TAPE RETAINER	
505	A-6760-178-A	DRUM SUB ASSY, UPPER	
506	X-3681-312-1	COUPLER ASSY, ROTARY	
507	3-669-157-00	BOLT (WASHER) (2.6X8)	
508	A-6762-260-A	DISK ASSY (DSR-78-R)	
509	X-3669-105-0	SPACER BLOCK ASSY	
510	X-2621-204-2	STATOR ASSY, D	
511	X-2621-202-1	ROTOR ASSY, D	

No.	Part No.	Description	Remark
512	A-6761-093-A	ACE ASSY	513, 514
513	3-696-500-02	SCREW, ADJUSTMENT, HEIGHT	
514	3-696-408-01	SPRING, TORSION	
515	3-696-516-01	SCREW (2X4), SW (ISO) (+) P	
516	3-696-517-02	PROTECTOR	
517	3-693-439-01	SCREW (P2.6X12), (+)	
518	3-684-247-01	BUSHING, ACE	
519	3-669-600-11	WASHER, FLAT (3.5)	
520	3-429-123-00	SPRING	
521	3-694-212-01	SCREW, FITTING	
522	*X-3696-339-4	CHASSIS ASSY, MECHANICAL	

5-12. HARDWARE LIST

Ref.No	Part No.	Description	Remark
		SCREW	
	7-621-257-55	SCREW +P 2.3X8	
	7-621-770-87	SCREW +P 2.6X5	
	7-627-552-38	SCREW, PRECISION +P 1.7X3	
	7-627-553-18	SCREW, PRECISION +P 2X2	
	7-627-554-07	SCREW, PRECISION +P 2X2.2	
	7-628-254-15	SCREW +PS 2.6X6	
	7-682-248-09	SCREW +K 3X8	
	7-682-251-09	SCREW +K 3X14	
	7-682-545-04	SCREW +P 3X4	
	7-682-647-01	SCREW +PS 3X6	
	7-682-648-01	SCREW +PS 3X8	
	7-685-132-11	SCREW +P 2.6X5 TYPE2 NON-SLIT	
	7-685-134-14	SCREW +P 2.6X8 TYPE2 NON-SLIT	
	7-685-645-71	SCREW +BVTP 3X6 TYPE2 IT-3	
	7-685-645-81	SCREW +BVTP 3X6 TYPE2	
	7-685-646-71	SCREW +BVTP 3X8 TYPE2 IT-3	
	7-685-646-81	SCREW +BVTP 3X8 TYPE2	
	7-685-649-71	SCREW +BVTP 3X14 TYPE2 IT-3	
	7-685-649-81	SCREW +BVTP 3X14 TYPE2	
	7-685-791-04	SCREW +BVTT 2.6X5 (S)	
		SET-SCREW	
	7-621-712-46	SET-SCREW, SLOT 2.6X5FLAT POINT	
	7-683-174-21	SET-SCREW, SLOT 3X4 CONE POINT	
		STOP RING	
	7-624-104-04	STOP RING 2.0, TYPE -E	
	7-624-105-04	STOP RING 2.3, TYPE -E	
	7-624-106-04	STOP RING 3.0, TYPE -E	
	7-624-109-04	STOP RING 5.0, TYPE -E	
	7-624-111-04	STOP RING 7.0, TYPE -E	
		WASHER	
	7-623-422-07	LW3, TYPE B	
	7-688-002-11	W 2.6, MIDDLE	

SECTION 6

ELECTRICAL PARTS LIST

NOTE:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS
- All resistors are in ohms
- F : nonflammable

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

CAPACITORS
- MF : μF, PF : μμF

COILS
- MMH : mH, UH : μH

Ref.No	Part No.	Description				Remark
	A-4910-063-A	R STATOR (REEL MOTOR) BOARD, COMPLETE				
		**				
	*1-560-461-00	PIN, CONNECTOR 5P				
		CAPACITOR				
C1	1-123-821-00	ELECT	47MF	20%	16V	
C2	1-123-821-00	ELECT	47MF	20%	16V	
C3	1-123-821-00	ELECT	47MF	20%	16V	
C4	1-123-821-00	ELECT	47MF	20%	16V	
		DIODE				
H1	8-719-800-31	DIODE THS103A-1				
H2	8-719-800-31	DIODE THS103A-1				
		IC				
IC1	8-759-801-97	IC LB1615				
		RESISTOR				
R1	1-247-823-00	CARBON	470	5%	1/6W	
R2	1-249-429-11	CARBON	10K	5%	1/6W	
R3	1-249-437-11	CARBON	47K	5%	1/6W	
R4	1-249-437-11	CARBON	47K	5%	1/6W	
R5	1-249-437-11	CARBON	47K	5%	1/6W	
R6	1-249-437-11	CARBON	47K	5%	1/6W	

****

Ref.No	Part No.	Description				Remark
	*A-6711-658-A	YC-40 BOARD, COMPLETE				
		**********************				
		BAND PASS FILTER				
BPF001	1-235-098-00	FILTER, BAND PASS				
		CAPACITOR				
C010	1-123-356-00	ELECT	10MF	20%	16V	
C013	1-123-306-00	ELECT	47MF	20%	10V	(ES MODEL)
C014	1-123-369-00	ELECT	4.7MF	20%	25V	(ES MODEL)
C015	1-123-306-00	ELECT	47MF	20%	10V	(ES MODEL)
C016	1-108-589-00	MYLAR	0.027MF	5%	50V	(ES MODEL)
C017	1-101-004-00	CERAMIC	0.01MF		50V	(ES MODEL)
C018	1-123-306-00	ELECT	47MF	20%	10V	(ES MODEL)
C019	1-101-004-00	CERAMIC	0.01MF		50V	(ES MODEL)
C020	1-101-004-00	CERAMIC	0.01MF		50V	
C021	1-101-004-00	CERAMIC	0.01MF		50V	
C023	1-101-882-00	CERAMIC	51PF	5%	50V	
C024	1-130-047-00	FILM	180PF	5%	50V	
C025	1-106-172-00	MYLAR	0.001MF	5%	50V	
C026	1-101-059-21	CERAMIC	510PF	5%	50V	
C027	1-161-045-00	CERAMIC	0.0033MF	10%	25V	
C028	1-106-172-00	MYLAR	0.001MF	5%	50V	
C029	1-123-382-00	ELECT	3.3MF	20%	50V	
C032	1-102-816-00	CERAMIC	120PF	5%	50V	

Ref.No	Part No.	Description				Remark
C033	1-101-004-00	CERAMIC	0.01MF		50V	
C034	1-101-004-00	CERAMIC	0.01MF		50V	
C035	1-102-816-00	CERAMIC	120PF	5%	50V	
C036	1-101-882-00	CERAMIC	51PF	5%	50V	
C037	1-101-004-00	CERAMIC	0.01MF		50V	
C038	1-101-004-00	CERAMIC	0.01MF		50V	
C039	1-101-004-00	CERAMIC	0.01MF		50V	
C041	1-161-043-00	CERAMIC	0.0022MF	10%	25V	
C042	1-102-516-00	CERAMIC	27PF	5%	50V	(ES MODEL)
C043	1-101-004-00	CERAMIC	0.01MF		50V	(ES MODEL)
C044	1-101-004-00	CERAMIC	0.01MF		50V	(ES MODEL)
C045	1-102-523-00	CERAMIC	56PF	5%	50V	(ES MODEL)
C046	1-101-004-00	CERAMIC	0.01MF		50V	(ES MODEL)
C048	1-101-004-00	CERAMIC	0.01MF		50V	(ES MODEL)
C049	1-101-004-00	CERAMIC	0.01MF		50V	
C050	1-102-865-00	CERAMIC	8PF	0.5PF	50V	
C051	1-102-525-00	CERAMIC	68PF	5%	50V	
C052	1-102-525-00	CERAMIC	68PF	5%	50V	
C053	1-123-380-00	ELECT	1MF	20%	50V	
C054	1-161-040-00	CERAMIC	0.0012MF	10%	25V	
C055	1-123-380-00	ELECT	1MF	20%	50V	
C056	1-102-963-00	CERAMIC	33PF	5%	50V	
C057	1-102-980-00	CERAMIC	270PF	5%	50V	
C058	1-123-306-00	ELECT	47MF	20%	10V	
C059	1-101-004-00	CERAMIC	0.01MF		50V	
C060	1-108-579-00	MYLAR	0.01MF	5%	50V	
C061	1-123-382-00	ELECT	3.3MF	20%	50V	
C062	1-123-306-00	ELECT	47MF	20%	10V	
C063	1-101-004-00	CERAMIC	0.01MF		50V	
C064	1-102-521-00	CERAMIC	43PF	5%	50V	
C065	1-102-525-00	CERAMIC	68PF	5%	50V	
C066	1-102-525-00	CERAMIC	68PF	5%	50V	
C068	1-101-004-00	CERAMIC	0.01MF		50V	
C069	1-102-962-00	CERAMIC	30PF	5%	50V	
C070	1-101-004-00	CERAMIC	0.01MF		50V	
C071	1-123-380-00	ELECT	1MF	20%	50V	
C072	1-101-004-00	CERAMIC	0.01MF		50V	
C073	1-102-525-00	CERAMIC	68PF	5%	50V	
C074	1-102-525-00	CERAMIC	68PF	5%	50V	
C075	1-101-004-00	CERAMIC	0.01MF		50V	
C076	1-102-951-00	CERAMIC	15PF	5%	50V	
C077	1-123-330-00	ELECT	22MF	20%	16V	
C078	1-123-330-00	ELECT	22MF	20%	16V	
C079	1-102-852-00	CERAMIC	47PF	5%	50V	
C080	1-101-004-00	CERAMIC	0.01MF		50V	
C082	1-161-024-00	CERAMIC	0.082MF	10%	25V	
C083	1-102-977-00	CERAMIC	200PF	5%	50V	
C084	1-123-369-00	ELECT	4.7MF	20%	25V	
C085	1-101-004-00	CERAMIC	0.01MF		50V	
C086	1-106-174-00	MYLAR	0.0012MF	5%	50V	
C087	1-161-057-00	CERAMIC	0.033MF	10%	25V	
C092	1-101-004-00	CERAMIC	0.01MF		50V	
C093	1-101-006-00	CERAMIC	0.047MF		50V	

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Ref.No	Part No.	Description			Remark	
C094	1-101-006-00	CERAMIC	0.047MF		50V	
C095	1-102-976-00	CERAMIC	180PF	5%	50V	
C096	1-102-824-00	CERAMIC	470PF	5%	50V	
C097	1-102-823-00	CERAMIC	430PF	5%	50V	
C098	1-102-820-00	CERAMIC	330PF	5%	50V	
C099	1-102-525-00	CERAMIC	68PF	5%	50V	
C101	1-108-812-91	MYLAR	0.047MF	5%	50V	
C102	1-161-043-00	CERAMIC	0.0022MF	10%	25V	
C103	1-106-172-00	MYLAR	0.001MF	5%	50V	
C104	1-102-977-00	CERAMIC	200PF	5%	50V	
C105	1-102-973-00	CERAMIC	100PF	5%	50V	
C106	1-123-356-00	ELECT	10MF	20%	16V	
C107	1-161-025-00	CERAMIC	0.1MF	10%	25V	
C108	1-101-004-00	CERAMIC	0.01MF		50V	
C111	1-101-882-00	CERAMIC	51PF	5%	50V	
C112	1-101-004-00	CERAMIC	0.01MF		50V	
C113	1-101-006-00	CERAMIC	0.047MF		50V	
C114	1-101-880-00	CERAMIC	47PF	5%	50V	
C116	1-101-004-00	CERAMIC	0.01MF		50V	
C117	1-101-361-00	CERAMIC	150PF	5%	50V	
C120	1-101-004-00	CERAMIC	0.01MF		50V	
C121	1-101-004-00	CERAMIC	0.01MF		50V	
C122	1-101-004-00	CERAMIC	0.01MF		50V	
C123	1-101-004-00	CERAMIC	0.01MF		50V	
C124	1-102-948-21	CERAMIC	11PF	5%	50V	
C125	1-123-330-00	ELECT	22MF	20%	16V	
C129	1-123-330-00	ELECT	22MF	20%	16V	
C130	1-123-356-00	ELECT	10MF	20%	16V	
C131	1-123-380-00	ELECT	1MF	20%	50V	
C132	1-123-369-00	ELECT	4.7MF	20%	25V	
C134	1-102-820-00	CERAMIC	330PF	5%	50V	
C135	1-102-823-00	CERAMIC	430PF	5%	50V	
C136	1-102-976-00	CERAMIC	180PF	5%	50V	
C142	1-123-330-00	ELECT	22MF	20%	16V	
C144	1-102-508-00	CERAMIC	10PF	0.5PF	50V	
C145	1-102-521-00	CERAMIC	43PF	5%	50V	
C146	1-102-521-00	CERAMIC	43PF	5%	50V	
C147	1-102-508-00	CERAMIC	10PF	0.5PF	50V	
C148	1-101-006-00	CERAMIC	0.047MF		50V	
C155	1-101-004-00	CERAMIC	0.01MF		50V	
C156	1-101-004-00	CERAMIC	0.01MF		50V	
C159	1-102-822-00	CERAMIC	390PF	5%	50V	
C178	1-123-307-00	ELECT	100MF	20%	10V	
C179	1-123-307-00	ELECT	100MF	20%	10V	
C180	1-123-332-00	ELECT	47MF	20%	16V	
C183	1-101-006-00	CERAMIC	0.047MF		50V	
C191	1-101-004-00	CERAMIC	0.01MF		50V	
C192	1-123-330-00	ELECT	22MF	20%	16V	
C196	1-123-380-00	ELECT	1MF	20%	50V	
C197	1-123-356-00	ELECT	10MF	20%	16V	
C200	1-101-004-00	CERAMIC	0.01MF		50V	
C203	1-101-004-00	CERAMIC	0.01MF		50V	
C204	1-123-369-00	ELECT	4.7MF	20%	25V	

Ref.No	Part No.	Description			Remark	
C206	1-101-004-00	CERAMIC	0.01MF		50V	
C207	1-161-025-00	CERAMIC	0.1MF	10%	25V	
C208	1-123-356-00	ELECT	10MF	20%	16V	
C212	1-123-333-00	ELECT	100MF	20%	16V	
C217	1-101-006-00	CERAMIC	0.047MF		50V	
C219	1-123-356-00	ELECT	10MF	20%	16V	
C220	1-101-006-00	CERAMIC	0.047MF		50V	
C232	1-101-004-00	CERAMIC	0.01MF		50V	(E MODEL)
C233	1-123-380-00	ELECT	1MF	20%	50V	(E MODEL)
C248	1-101-006-00	CERAMIC	0.047MF		50V	
C251	1-101-006-00	CERAMIC	0.047MF		50V	
C252	1-102-816-00	CERAMIC	120PF	5%	50V	
C253	1-123-356-00	ELECT	10MF	20%	16V	
C257	1-101-006-00	CERAMIC	0.047MF		50V	
C261	1-123-330-00	ELECT	22MF	20%	16V	
C300	1-101-004-00	CERAMIC	0.01MF		50V	(ES MODEL)
C301	1-101-006-00	CERAMIC	0.047MF		50V	
C302	1-102-773-00	CERAMIC	330PF	5%	50V	
C303	1-161-047-00	CERAMIC	0.0047MF	10%	25V	
C401	1-123-381-00	ELECT	2.2MF	20%	50V	
C402	1-101-001-00	CERAMIC	0.001MF		50V	
C403	1-101-001-00	CERAMIC	0.001MF		50V	
C404	1-101-004-00	CERAMIC	0.01MF		50V	
C405	1-123-330-00	ELECT	22MF	20%	16V	
C406	1-123-330-00	ELECT	22MF	20%	16V	
C407	1-102-962-00	CERAMIC	30PF	5%	50V	
C408	1-101-888-00	CERAMIC	68PF	5%	50V	
C409	1-123-381-00	ELECT	2.2MF	20%	50V	
C410	1-102-936-00	CERAMIC	3PF	0.25PF	50V	
C411	1-101-005-00	CERAMIC	0.022MF		50V	
C412	1-123-318-00	ELECT	33MF	20%	16V	
C414	1-123-356-00	ELECT	10MF	20%	16V	
C417	1-102-948-00	CERAMIC	11PF	5%	50V	
C418	1-102-965-00	CERAMIC	39PF	5%	50V	
C419	1-123-356-00	ELECT	10MF	20%	16V	
C420	1-123-369-00	ELECT	4.7MF	20%	25V	
C501	1-101-004-00	CERAMIC	0.01MF		50V	
C502	1-101-004-00	CERAMIC	0.01MF		50V	
C503	1-101-004-00	CERAMIC	0.01MF		50V	
C504	1-161-055-00	CERAMIC	0.022MF	10%	25V	
C505	1-102-822-00	CERAMIC	390PF	5%	50V	
C506	1-101-006-00	CERAMIC	0.047MF		50V	
C507	1-123-330-00	ELECT	22MF	20%	16V	
C613	1-101-004-00	CERAMIC	0.01MF		50V	(ES MODEL)
C701	1-102-530-00	CERAMIC	120PF	5%	50V	
C702	1-123-380-00	ELECT	1MF	20%	50V	
C703	1-123-380-00	ELECT	1MF	20%	50V	
C704	1-123-380-00	ELECT	1MF	20%	50V	
C705	1-123-380-00	ELECT	1MF	20%	50V	
C720	1-101-004-00	CERAMIC	0.01MF		50V	
C721	1-123-356-00	ELECT	10MF	20%	16V	
C722	1-123-369-00	ELECT	4.7MF	20%	25V	
C723	1-161-057-00	CERAMIC	0.033MF	10%	25V	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
C731	1-101-004-00	CERAMIC	0.01MF		50V
C732	1-101-004-00	CERAMIC	0.01MF		50V
C733	1-101-004-00	CERAMIC	0.01MF		50V
C740	1-101-004-00	CERAMIC	0.01MF		50V
C741	1-101-006-00	CERAMIC	0.047MF		50V
C743	1-102-904-91	CERAMIC	110PF	5%	50V
C744	1-123-330-00	ELECT	22MF	20%	16V
C745	1-102-518-00	CERAMIC	33PF	5%	50V
C746	1-102-511-00	CERAMIC	13PF	5%	50V
C751	1-123-330-00	ELECT	22MF	20%	16V
C752	1-101-004-00	CERAMIC	0.01MF		50V
C755	1-123-330-00	ELECT	22MF	20%	16V
C756	1-101-004-00	CERAMIC	0.01MF		50V
C757	1-123-330-00	ELECT	22MF	20%	16V
C758	1-101-004-00	CERAMIC	0.01MF		50V
C759	1-101-006-00	CERAMIC	0.047MF		50V
C760	1-101-006-00	CERAMIC	0.047MF	50V	(ES MODEL)
C761	1-102-128-21	CERAMIC	0.0082MF	10%	50V
C762	1-102-824-00	CERAMIC	470PF	5%	50V
C763	1-123-330-00	ELECT	22MF	20%	16V
C765	1-123-356-00	ELECT	10MF	20%	16V
C766	1-102-973-00	CERAMIC	100PF	5%	50V
C767	1-123-330-00	ELECT	22MF	20%	16V
C768	1-124-343-00	ELECT	2200MF	20%	16V
C769	1-161-013-00	CERAMIC	0.01MF	10%	25V
C770	1-102-525-00	CERAMIC	68PF	5%	50V
C771	1-123-356-00	ELECT	10MF	20%	16V
C772	1-123-356-00	ELECT	10MF	20%	16V
C773	1-123-356-00	ELECT	10MF	20%	16V
C801	1-102-865-00	CERAMIC	8PF	0.5PF	50V
C802	1-101-004-00	CERAMIC	0.01MF		50V
C803	1-123-330-00	ELECT	22MF	20%	16V
C804	1-123-306-00	ELECT	47MF	20%	6.3V
C805	1-101-001-00	CERAMIC	0.001MF		50V
C807	1-101-006-00	CERAMIC	0.047MF		50V
C809	1-101-004-00	CERAMIC	0.01MF		50V
C910	1-123-356-00	ELECT	10MF	20%	16V
C914	1-123-330-00	ELECT	22MF	20%	16V
C916	1-102-816-00	CERAMIC	120PF	5%	50V
C921	1-123-318-00	ELECT	33MF	20%	16V
C926	1-101-004-00	CERAMIC	0.01MF		50V
C927	1-161-025-00	CERAMIC	0.1MF	10%	25V
C928	1-161-025-00	CERAMIC	0.1MF	10%	25V
C929	1-123-330-00	ELECT	22MF	20%	16V
C930	1-123-356-00	ELECT	10MF	20%	16V
C931	1-123-356-00	ELECT	10MF	20%	16V
C932	1-124-475-11	ELECT	470MF	20%	16V
C933	1-123-356-00	ELECT	10MF	20%	16V
C934	1-123-356-00	ELECT	10MF	20%	16V
C935	1-124-473-11	ELECT	1000MF	20%	10V
C936	1-123-332-00	ELECT	47MF	20%	16V
C937	1-101-004-00	CERAMIC	0.01MF		50V
C943	1-123-356-00	ELECT	10MF	20%	16V

Ref.No	Part No.	Description			Remark
C944	1-123-333-00	ELECT	100MF	20%	16V
C945	1-124-473-11	ELECT	1000MF	20%	10V
C947	1-101-004-00	CERAMIC	0.01MF		50V
C951	1-101-004-00	CERAMIC	0.01MF		50V
C952	1-123-332-00	ELECT	47MF	20%	16V
C957	1-123-356-00	ELECT	10MF	20%	16V
C962	1-123-330-00	ELECT	22MF	20%	16V
		FILTER			
CF001	1-527-998-00	FILTER, CERAMIC (4.16MHz) (ES MODEL)			
CF002	1-527-875-00	FILTER, CERAMIC (5.12MHz)			
CF003	1-527-849-00	FILTER, CERAMIC (13.3MHz)			
		CONNECTOR			
CN001	*1-560-896-00	PIN, CONNECTOR 8P			
CN002	*1-564-030-00	PIN, CONNECTOR 5P			
CN003	*1-560-893-00	PIN, CONNECTOR 5P			
CN004	*1-564-031-00	PIN, CONNECTOR 6P			
CN005	*1-564-028-00	PIN, CONNECTOR 3P			
CN006	*1-564-028-00	PIN, CONNECTOR 3P			
CN007	*1-564-031-00	PIN, CONNECTOR 6P			
CN008	*1-564-037-21	PIN, CONNECTOR 12P			
CN009	*1-560-898-00	PIN, CONNECTOR 10P			
CN010	*1-564-037-31	PIN, CONNECTOR 12P			
CN011	*1-560-890-00	PIN, CONNECTOR 2P			
		JACK			
CNJ001	1-536-936-21	CONNECTOR BOARD, BNC			
CNJ003	1-561-534-00	SOCKET 21P			
		RRIMMER			
CV001	1-141-275-00	CAP, TRIMMER (8-20P)			
		DIODE			
D005	8-719-911-19	DIODE 1SS119 (ES MODEL)			
D006	8-719-000-06	DIODE MC921 (ES MODEL)			
D009	8-719-000-06	DIODE MC921 (ES MODEL)			
D012	8-719-911-19	DIODE 1SS119 (ES MODEL)			
D013	8-719-911-19	DIODE 1SS119			
D014	8-719-911-19	DIODE 1SS119			
D016	8-719-000-12	DIODE MC931			
D017	8-719-911-19	DIODE 1SS119			
D018	8-719-911-19	DIODE 1SS119			
D019	8-719-911-19	DIODE 1SS119			
D020	8-719-911-19	DIODE 1SS119			
D021	8-719-911-19	DIODE 1SS119			
D022	8-719-911-19	DIODE 1SS119			
D025	8-719-911-19	DIODE 1SS119			
D027	8-719-000-06	DIODE MC921			
D029	8-719-100-56	DIODE RD10EB1			
D040	8-719-100-40	DIODE RD6.8EB1			
D190	8-719-911-19	DIODE 1SS119			

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description	Remark
D703	8-719-911-19	DIODE 1SS119	
D704	8-719-911-19	DIODE 1SS119	
D705	8-719-911-19	DIODE 1SS119	
D706	8-719-911-19	DIODE 1SS119	
D707	8-719-911-19	DIODE 1SS119	
D801	8-719-911-19	DIODE 1SS119	
D802	8-719-911-19	DIODE 1SS119	
D803	8-719-911-19	DIODE 1SS119	
D804	8-719-911-19	DIODE 1SS119	
D805	8-719-911-19	DIODE 1SS119	
D806	8-719-911-19	DIODE 1SS119	
D809	8-719-911-19	DIODE 1SS119	
D810	8-719-911-19	DIODE 1SS119	
D811	8-719-102-88	DIODE RD9.1EN3	
D909	8-719-200-02	DIODE 10E-2	
D915	8-719-911-19	DIODE 1SS119	
		DELAY LINE	
DL001	1-415-313-00	DELAY LINE (1H)	
DL401	1-415-352-11	DELAY LINE, 1H	
DL501	1-415-419-11	DELAY LINE	
		IC	
IC001	8-759-909-20	IC BA634 (ES MODEL)	
IC002	8-759-904-95	IC BA7007 (ES MODEL)	
IC003	8-759-202-47	IC CX10023	
IC004	8-759-208-94	IC CX-894 (ES MODEL)	
IC005	8-752-006-10	IC CX20061 (ES MODEL)	
IC006	8-759-203-99	IC CX10021B-NP	
IC009	8-759-101-62	IC CX20043	
IC011	8-752-006-10	IC CX20061	
IC020	8-759-045-38	IC MC14538BCP	
IC401	8-758-662-00	IC CX-866B	
IC901	8-759-979-26	IC CX-7926	
		COIL	
L001	1-410-450-11	MICRO INDUCTOR 3.9MMH	
L002	1-410-411-11	MICRO INDUCTOR 2.2UH	
L003	1-408-408-00	MICRO INDUCTOR 8.2UH	
L004	1-408-406-00	MICRO INDUCTOR 5.6UH	
L005	1-408-415-00	MICRO INDUCTOR 33UH	
L006	1-408-426-00	MICRO INDUCTOR 270UH	
L007	1-408-427-00	MICRO INDUCTOR 330UH	
L008	1-408-421-00	MICRO INDUCTOR 100UH	
L009	1-408-417-00	MICRO INDUCTOR 47UH	
L011	1-408-423-00	MICRO INDUCTOR 150UH	
L012	1-408-409-00	MICRO INDUCTOR 10UH	
L014	1-408-422-00	MICRO INDUCTOR 120UH	
L016	1-408-409-00	MICRO INDUCTOR 10UH	
L017	1-408-423-00	MICRO INDUCTOR 150UH	
L021	1-408-421-00	MICRO INDUCTOR 100UH	
L022	1-408-423-00	MICRO INDUCTOR 150UH	

Ref.No	Part No.	Description	Remark
L023	1-408-421-00	MICRO INDUCTOR 100UH	
L036	1-408-429-00	MICRO INDUCTOR 470UH	
L050	1-408-414-00	MICRO INDUCTOR 27UH	
L051	1-408-417-00	MICRO INDUCTOR 47UH	
L052	1-408-420-00	MICRO INDUCTOR 82UH	
L053	1-408-423-00	MICRO INDUCTOR 150UH	
L055	1-408-409-00	MICRO INDUCTOR 10UH	
L401	1-408-397-00	MICRO INDUCTOR 1UH	
L402	1-408-397-00	MICRO INDUCTOR 1UH	
L501	1-408-408-00	MICRO INDUCTOR 8.2UH	
L701	1-408-415-00	MICRO INDUCTOR 33UH	
L720	1-410-122-11	MICRO INDUCTOR 1.8MMH	
L801	1-408-421-00	MICRO INDUCTOR 100UH	
L802	1-408-414-00	MICRO INDUCTOR 27UH	
		LOW PASS FILTER	
LPF001	1-235-097-00	FILTER, LOW PASS	
		VARIABLE COIL	
LV001	1-407-291-00	MICRO INDUCTOR 15MMH (ES MODEL)	
LV002	1-408-532-00	COIL, VARIABLE (ES MODEL)	
LV003	1-408-513-00	COIL (VARIABLE) (ES MODEL)	
LV501	1-408-512-00	COIL (VARIABLE)	
		IC LINK	
PS001	⚠1-532-685-11	LINK, IC	
		TRANSISTOR	
Q010	8-729-177-43	TRANSISTOR 2SD774	
Q011	8-729-204-83	TRANSISTOR 2SA1048	
Q014	8-729-113-33	TRANSISTOR 2SB733	
Q015	8-729-900-80	TRANSISTOR DTC114ES	
Q016	8-729-245-83	TRANSISTOR 2SC2458	
Q019	8-729-204-83	TRANSISTOR 2SA1048 (ES MODEL)	
Q020	8-729-204-83	TRANSISTOR 2SA1048	
Q021	8-729-245-83	TRANSISTOR 2SC2458 (ES MODEL)	
Q022	8-729-245-83	TRANSISTOR 2SC2458	
Q023	8-729-245-83	TRANSISTOR 2SC2458	
Q024	8-729-204-83	TRANSISTOR 2SA1048	
Q025	8-729-900-85	TRANSISTOR DTC144WS (ES MODEL)	
Q026	8-729-204-83	TRANSISTOR 2SA1048	
Q027	8-729-204-83	TRANSISTOR 2SA1048 (ES MODEL)	
Q028	8-729-245-83	TRANSISTOR 2SC2458	
Q029	8-729-245-83	TRANSISTOR 2SC2458 (ES MODEL)	
Q030	8-729-245-83	TRANSISTOR 2SC2458	
Q031	8-729-900-36	TRANSISTOR DTC124ES	
Q033	8-729-245-83	TRANSISTOR 2SC2458	
Q034	8-729-245-83	TRANSISTOR 2SC2458	
Q035	8-729-900-80	TRANSISTOR DTC114ES	
Q036	8-729-178-55	TRANSISTOR 2SC2785E	
Q037	8-729-117-56	TRANSISTOR 2SA1175-K	
Q038	8-729-384-46	TRANSISTOR 2SA844-D	
Q039	8-729-603-30	TRANSISTOR 2SC403SP	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
Q040	8-729-603-30	TRANSISTOR 2SC403SP	
Q041	8-729-384-46	TRANSISTOR 2SA844	
Q048	8-729-603-30	TRANSISTOR 2SC403SP	
Q049	8-729-603-30	TRANSISTOR 2SC403SP	
Q050	8-729-603-30	TRANSISTOR 2SC403SP	
Q051	8-729-384-46	TRANSISTOR 2SA844	
Q056	8-729-245-83	TRANSISTOR 2SC2458	
Q061	8-729-245-83	TRANSISTOR 2SC2458	
Q068	8-729-245-83	TRANSISTOR 2SC2458	
Q070	8-729-245-83	TRANSISTOR 2SC2458	
Q071	8-729-245-83	TRANSISTOR 2SC2458	
Q076	8-729-204-83	TRANSISTOR 2SA1048 (E MODEL)	
Q077	8-729-245-83	TRANSISTOR 2SC2458 (E MODEL)	
Q080	8-729-245-83	TRANSISTOR 2SC2458	
Q100	8-729-900-85	TRANSISTOR DTC144WS	
Q101	8-729-900-89	TRANSISTOR DTC144ES	
Q102	8-729-900-65	TRANSISTOR DTA144ES	
Q103	8-729-245-83	TRANSISTOR 2SC2458	
Q401	8-729-245-83	TRANSISTOR 2SC2458	
Q501	8-729-245-83	TRANSISTOR 2SC2458	
Q502	8-729-245-83	TRANSISTOR 2SC2458	
Q503	8-729-245-83	TRANSISTOR 2SC2458	
Q504	8-729-245-83	TRANSISTOR 2SC2458	
Q620	8-729-204-83	TRANSISTOR 2SA1048 (ES MODEL)	
Q701	8-729-245-83	TRANSISTOR 2SC2458	
Q702	8-729-900-89	TRANSISTOR DTC144ES	
Q703	8-729-204-83	TRANSISTOR 2SA1048	
Q704	8-729-900-89	TRANSISTOR DTC144ES	
Q707	8-729-900-89	TRANSISTOR DTC144ES	
Q709	8-729-900-36	TRANSISTOR DTC124ES	
Q715	8-729-245-83	TRANSISTOR 2SC2458	
Q716	8-729-245-83	TRANSISTOR 2SC2458	
Q717	8-729-245-83	TRANSISTOR 2SC2458	
Q720	8-729-900-89	TRANSISTOR DTC144ES	
Q721	8-729-900-89	TRANSISTOR DTC144ES	
Q806	8-729-245-83	TRANSISTOR 2SC2458 (ES MODEL)	
Q810	8-729-900-89	TRANSISTOR DTC144ES	
Q811	8-729-900-89	TRANSISTOR DTC144ES	
Q812	8-729-900-89	TRANSISTOR DTC144ES	
Q813	8-729-900-89	TRANSISTOR DTC144ES	
Q814	8-729-900-89	TRANSISTOR DTC144ES	
Q815	8-729-900-89	TRANSISTOR DTC144ES	
Q816	8-729-603-30	TRANSISTOR 2SC403SP	
Q817	8-729-603-30	TRANSISTOR 2SC403SP	
Q818	8-729-603-30	TRANSISTOR 2SC403SP	
Q819	8-729-603-30	TRANSISTOR 2SC403SP	
Q820	8-729-603-30	TRANSISTOR 2SC403SP	
Q821	8-729-117-56	TRANSISTOR 2SA1175-K	
Q822	8-729-178-55	TRANSISTOR 2SC2785E	
Q823	8-729-117-56	TRANSISTOR 2SA1175-K	
Q824	8-729-178-55	TRANSISTOR 2SC2785E	
Q825	8-729-603-30	TRANSISTOR 2SC403SP	
Q826	8-729-900-89	TRANSISTOR DTC144ES	

Ref.No	Part No.	Description	Remark
Q827	8-729-245-83	TRANSISTOR 2SC2458	
Q832	8-729-603-30	TRANSISTOR 2SC403SP	
Q833	8-729-603-30	TRANSISTOR 2SC403SP	
Q834	8-729-900-80	TRANSISTOR DTC114ES	
Q837	8-729-204-83	TRANSISTOR 2SA1048	
Q838	8-729-178-55	TRANSISTOR 2SC2785E	
Q839	8-729-178-55	TRANSISTOR 2SC2785E	
Q905	8-729-177-43	TRANSISTOR 2SD774-3	
Q906	8-729-204-83	TRANSISTOR 2SA1048	
Q910	8-729-900-36	TRANSISTOR DTC124ES	
Q921	8-729-204-83	TRANSISTOR 2SA1048	
Q922	8-729-900-36	TRANSISTOR DTC124ES	
Q923	8-729-245-83	TRANSISTOR 2SC2458	
Q925	8-729-245-83	TRANSISTOR 2SC2458	
Q926	8-729-900-89	TRANSISTOR DTC144ES	
Q928	8-729-245-83	TRANSISTOR 2SC2458	

RESISTOR

R032	1-247-831-00	CARBON	1K	5%	1/6W	
R035	1-247-859-00	CARBON	15K	5%	1/6W	
R038	1-247-837-00	CARBON	1.8K	5%	1/6W	
R039 ⚠	1-212-857-51	FUSIBLE	10	5%	1/4W	F
R046	1-249-419-11	CARBON	1.5K	5%	1/6W	(ES MODEL)
R048	1-247-847-00	CARBON	4.7K	5%	1/6W	(ES MODEL)
R050	1-247-853-00	CARBON	8.2K	5%	1/6W	
R051	1-247-821-00	CARBON	390	5%	1/6W	
R052	1-247-819-00	CARBON	330	5%	1/6W	
R053	1-247-843-00	CARBON	3.3K	5%	1/6W	
R054	1-247-847-00	CARBON	4.7K	5%	1/6W	
R055	1-247-849-00	CARBON	5.6K	5%	1/6W	(ES MODEL)
R056	1-247-867-00	CARBON	33K	5%	1/6W	
R058	1-247-873-00	CARBON	56K	5%	1/6W	
R059	1-247-863-00	CARBON	22K	5%	1/6W	
R060	1-247-867-00	CARBON	33K	5%	1/6W	
R061	1-249-429-11	CARBON	10K	5%	1/6W	
R062	1-249-429-11	CARBON	10K	5%	1/6W	
R063	1-247-841-00	CARBON	2.7K	5%	1/6W	
R064	1-247-848-00	CARBON	5.1K	5%	1/6W	
R065	1-247-889-00	CARBON	270K	5%	1/6W	
R066	1-247-870-00	CARBON	43K	5%	1/6W	
R067	1-247-862-00	CARBON	20K	5%	1/6W	
R068	1-247-838-00	CARBON	2K	5%	1/6W	
R069	1-247-831-00	CARBON	1K	5%	1/6W	
R070	1-247-831-00	CARBON	1K	5%	1/6W	
R071	1-249-429-11	CARBON	10K	5%	1/6W	
R072	1-247-841-00	CARBON	2.7K	5%	1/6W	
R073	1-247-831-00	CARBON	1K	5%	1/6W	
R074	1-247-831-00	CARBON	1K	5%	1/6W	
R075	1-247-815-00	CARBON	220	5%	1/6W	
R076	1-249-429-11	CARBON	10K	5%	1/6W	
R079	1-249-429-11	CARBON	10K	5%	1/6W	(ES MODEL)
R080	1-247-853-00	CARBON	8.2K	5%	1/6W	(ES MODEL)
R081	1-247-843-00	CARBON	3.3K	5%	1/6W	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

YC-40

Ref.No	Part No.	Description				Remark
R082	1-249-437-11	CARBON	47K	5%	1/6W	
R083	1-247-825-00	CARBON	560	5%	1/6W	(ES MODEL)
R084	1-247-831-00	CARBON	1K	5%	1/6W	(ES MODEL)
R085	1-247-800-00	CARBON	51	5%	1/6W	(ES MODEL)
R086	1-247-825-00	CARBON	560	5%	1/6W	
R087	1-247-825-00	CARBON	560	5%	1/6W	
R088	1-247-807-00	CARBON	100	5%	1/6W	
R091	1-247-824-00	CARBON	510	5%	1/6W	(ES MODEL)
R092	1-247-785-00	CARBON	12	5%	1/6W	(ES MODEL)
R093	1-247-806-00	CARBON	91	5%	1/6W	(ES MODEL)
R094	1-249-437-11	CARBON	47K	5%	1/6W	
R096	1-247-879-00	CARBON	100K	5%	1/6W	(ES MODEL)
R097	1-247-881-00	CARBON	120K	5%	1/6W	(ES MODEL)
R098	1-247-891-00	CARBON	330K	5%	1/6W	
R100	1-247-873-00	CARBON	56K	5%	1/6W	(ES MODEL)
R101	1-247-867-00	CARBON	33K	5%	1/6W	(ES MODEL)
R103	1-247-831-00	CARBON	1K	5%	1/6W	
R104	1-249-421-11	CARBON	2.2K	5%	1/6W	
R105	1-247-829-00	CARBON	820	5%	1/6W	
R106	1-247-831-00	CARBON	1K	5%	1/6W	
R107	1-247-824-00	CARBON	510	5%	1/6W	
R108	1-249-421-11	CARBON	2.2K	5%	1/6W	
R109	1-247-867-00	CARBON	33K	5%	1/6W	
R111	1-247-851-00	CARBON	6.8K	5%	1/6W	
R112	1-247-851-00	CARBON	6.8K	5%	1/6W	
R113	1-247-843-00	CARBON	3.3K	5%	1/6W	
R114	1-247-828-00	CARBON	750	5%	1/6W	
R115	1-247-879-00	CARBON	100K	5%	1/6W	
R116	1-247-853-00	CARBON	8.2K	5%	1/6W	
R117	1-247-846-00	CARBON	4.3K	5%	1/6W	
R118	1-247-815-00	CARBON	220	5%	1/6W	
R119	1-247-847-00	CARBON	4.7K	5%	1/6W	
R120	1-247-831-00	CARBON	1K	5%	1/6W	
R121	1-247-831-00	CARBON	1K	5%	1/6W	
R122	1-249-421-11	CARBON	2.2K	5%	1/6W	
R125	1-247-831-00	CARBON	1K	5%	1/6W	
R126	1-247-831-00	CARBON	1K	5%	1/6W	
R127	1-249-419-11	CARBON	1.5K	5%	1/6W	
R128	1-247-831-00	CARBON	1K	5%	1/6W	
R129	1-247-867-00	CARBON	33K	5%	1/6W	
R130	1-247-843-00	CARBON	3.3K	5%	1/6W	
R131	1-247-841-00	CARBON	2.7K	5%	1/6W	
R132	1-247-887-00	CARBON	220K	5%	1/6W	
R133	1-247-807-00	CARBON	100	5%	1/6W	
R134	1-247-851-00	CARBON	6.8K	5%	1/6W	
R135	1-247-883-00	CARBON	150K	5%	1/6W	
R136	1-247-879-00	CARBON	100K	5%	1/6W	
R137	1-247-857-00	CARBON	12K	5%	1/6W	
R138	1-249-434-11	CARBON	27K	5%	1/6W	
R139	1-247-841-00	CARBON	2.7K	5%	1/6W	
R141	1-247-831-00	CARBON	1K	5%	1/6W	
R142	1-247-842-00	CARBON	3K	5%	1/6W	
R143	1-247-837-00	CARBON	1.8K	5%	1/6W	

Ref.No	Part No.	Description				Remark
R144	1-247-824-00	CARBON	510	5%	1/6W	
R146	1-247-830-00	CARBON	910	5%	1/6W	
R147	1-249-429-11	CARBON	10K	5%	1/6W	
R148	1-247-831-00	CARBON	1K	5%	1/6W	
R149	1-247-819-00	CARBON	330	5%	1/6W	
R150	1-247-863-00	CARBON	22K	5%	1/6W	
R151	1-247-812-00	CARBON	160	5%	1/6W	
R152	1-247-829-00	CARBON	820	5%	1/6W	
R153	1-247-863-00	CARBON	22K	5%	1/6W	
R154	1-247-821-00	CARBON	390	5%	1/6W	
R155	1-249-421-11	CARBON	2.2K	5%	1/6W	
R157	1-247-837-00	CARBON	1.8K	5%	1/6W	
R158	1-247-817-00	CARBON	270	5%	1/6W	
R159	1-247-813-00	CARBON	180	5%	1/6W	
R160	1-247-832-00	CARBON	1.1K	5%	1/6W	
R161	1-249-429-11	CARBON	10K	5%	1/6W	
R163	1-247-831-00	CARBON	1K	5%	1/6W	
R165	1-247-833-00	CARBON	1.2K	5%	1/6W	
R166	1-247-807-00	CARBON	100	5%	1/6W	
R171	1-247-901-00	CARBON	820K	5%	1/6W	
R172	1-247-838-00	CARBON	2K	5%	1/6W	
R173	1-247-861-00	CARBON	18K	5%	1/6W	
R174	1-249-421-11	CARBON	2.2K	5%	1/6W	
R175	1-247-831-00	CARBON	1K	5%	1/6W	
R176	1-249-421-11	CARBON	2.2K	5%	1/6W	
R178	1-249-421-11	CARBON	2.2K	5%	1/6W	
R179	1-247-843-00	CARBON	3.3K	5%	1/6W	
R181	1-249-419-11	CARBON	1.5K	5%	1/6W	
R182	1-247-819-00	CARBON	330	5%	1/6W	
R183	1-249-421-11	CARBON	2.2K	5%	1/6W	
R184	1-247-807-00	CARBON	100	5%	1/6W	
R185	1-247-843-00	CARBON	3.3K	5%	1/6W	
R189	1-247-825-00	CARBON	560	5%	1/6W	
R190	1-247-825-00	CARBON	560	5%	1/6W	
R192	1-247-831-00	CARBON	1K	5%	1/6W	
R193	1-249-429-11	CARBON	10K	5%	1/6W	
R194	1-247-819-00	CARBON	330	5%	1/6W	
R195	1-247-812-00	CARBON	160	5%	1/6W	
R196	1-247-863-00	CARBON	22K	5%	1/6W	
R197	1-247-863-00	CARBON	22K	5%	1/6W	
R198	1-247-829-00	CARBON	820	5%	1/6W	
R199	1-247-821-00	CARBON	390	5%	1/6W	
R200	1-249-421-11	CARBON	2.2K	5%	1/6W	
R201	1-247-837-00	CARBON	1.8K	5%	1/6W	
R203	1-247-813-00	CARBON	180	5%	1/6W	
R204	1-247-817-00	CARBON	270	5%	1/6W	
R205	1-247-807-00	CARBON	100	5%	1/6W	
R206	1-247-831-00	CARBON	1K	5%	1/6W	
R207	1-247-873-00	CARBON	56K	5%	1/6W	
R208	1-247-873-00	CARBON	56K	5%	1/6W	
R214	1-247-831-00	CARBON	1K	5%	1/6W	
R215	1-247-831-00	CARBON	1K	5%	1/6W	
R216	1-247-819-00	CARBON	330	5%	1/6W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R217	1-249-421-11	CARBON	2.2K	5%	1/6W	
R218	1-247-857-00	CARBON	12K	5%	1/6W	
R219	1-247-873-00	CARBON	56K	5%	1/6W	
R220	1-249-434-11	CARBON	27K	5%	1/6W	
R221	1-247-849-00	CARBON	5.6K	5%	1/6W	
R222	1-247-837-00	CARBON	1.8K	5%	1/6W	
R223	1-247-837-00	CARBON	1.8K	5%	1/6W	
R231	1-247-867-00	CARBON	33K	5%	1/6W	
R236	1-247-853-00	CARBON	8.2K	5%	1/6W	
R238	1-247-851-00	CARBON	6.8K	5%	1/6W	
R239	1-249-429-11	CARBON	10K	5%	1/6W	
R240	1-249-421-11	CARBON	2.2K	5%	1/6W	
R248	1-247-819-00	CARBON	330	5%	1/6W	
R274	1-247-883-00	CARBON	150K	5%	1/6W	
R275	1-249-437-11	CARBON	47K	5%	1/6W	
R276	1-247-849-00	CARBON	5.6K	5%	1/6W	
R277	1-249-429-11	CARBON	10K	5%	1/6W	
R280	1-249-419-11	CARBON	1.5K	5%	1/6W	
R281	1-247-890-00	CARBON	300K	5%	1/6W	
R282	1-247-819-00	CARBON	330	5%	1/6W	
R283	1-249-421-11	CARBON	2.2K	5%	1/6W	
R284	1-247-877-00	CARBON	82K	5%	1/6W	
R286	1-247-843-00	CARBON	3.3K	5%	1/6W	
R291	1-247-863-00	CARBON	22K	5%	1/6W	
R292	1-247-875-00	CARBON	68K	5%	1/6W	
R293	1-247-819-00	CARBON	330	5%	1/6W	
R295	1-249-421-11	CARBON	2.2K	5%	1/6W	
R298	1-247-894-00	CARBON	430K	5%	1/6W	
R299	1-247-892-00	CARBON	360K	5%	1/6W	
R301	1-249-429-11	CARBON	10K	5%	1/6W	
R302	1-247-819-00	CARBON	330	5%	1/6W	
R303	1-247-819-00	CARBON	330	5%	1/6W	
R304	1-247-847-00	CARBON	4.7K	5%	1/6W	
R312	1-247-879-00	CARBON	100K	5%	1/6W	
R313	1-247-823-00	CARBON	470	5%	1/6W	
R320	1-247-878-00	CARBON	91K	5%	1/6W	
R321	1-247-887-00	CARBON	220K	5%	1/6W	
R325	1-247-807-00	CARBON	100	5%	1/6W	
R331	1-247-852-00	CARBON	7.5K	5%	1/6W	
R342	1-247-807-00	CARBON	100	5%	1/6W	
R346	1-247-847-00	CARBON	4.7K	5%	1/6W	
R347	1-247-879-00	CARBON	100K	5%	1/6W	(E MODEL)
R351	1-247-815-00	CARBON	220	5%	1/6W	
R353	1-249-421-11	CARBON	2.2K	5%	1/6W	
R357	1-247-829-00	CARBON	820	5%	1/6W	
R370	1-247-797-00	CARBON	39	5%	1/6W	
R380	1-247-851-00	CARBON	6.8K	5%	1/6W	
R381	1-249-429-11	CARBON	10K	5%	1/6W	
R382	1-247-831-00	CARBON	1K	5%	1/6W	
R390	1-247-887-00	CARBON	220K	5%	1/6W	(E MODEL)
R401	1-247-810-00	CARBON	130	5%	1/6W	
R402	1-247-806-00	CARBON	91	5%	1/6W	
R403	1-247-867-00	CARBON	33K	5%	1/6W	

Ref.No	Part No.	Description				Remark
R404	1-249-437-11	CARBON	47K	5%	1/6W	
R405	1-247-831-00	CARBON	1K	5%	1/6W	
R406	1-247-832-00	CARBON	1.1K	5%	1/6W	
R407	1-247-832-00	CARBON	1.1K	5%	1/6W	
R408	1-247-849-00	CARBON	5.6K	5%	1/6W	
R409	1-247-831-00	CARBON	1K	5%	1/6W	
R413	1-247-829-00	CARBON	820	5%	1/6W	
R414	1-247-847-00	CARBON	4.7K	5%	1/6W	
R415	1-247-831-00	CARBON	1K	5%	1/6W	
R416	1-247-846-00	CARBON	4.3K	5%	1/6W	
R510	1-247-824-00	CARBON	510	5%	1/6W	
R511	1-247-867-00	CARBON	33K	5%	1/6W	
R512	1-247-847-00	CARBON	4.7K	5%	1/6W	
R513	1-247-863-00	CARBON	22K	5%	1/6W	
R514	1-247-821-00	CARBON	390	5%	1/6W	
R515	1-249-421-11	CARBON	2.2K	5%	1/6W	
R516	1-247-821-00	CARBON	390	5%	1/6W	
R517	1-247-821-00	CARBON	390	5%	1/6W	
R518	1-247-821-00	CARBON	390	5%	1/6W	
R519	1-247-821-00	CARBON	390	5%	1/6W	
R520	1-249-421-11	CARBON	2.2K	5%	1/6W	
R521	1-247-821-00	CARBON	390	5%	1/6W	
R522	1-249-421-11	CARBON	2.2K	5%	1/6W	
R525	1-247-843-00	CARBON	3.3K	5%	1/6W	
R603	1-247-843-00	CARBON	3.3K	5%	1/6W	
R607	1-249-429-11	CARBON	10K	5%	1/6W	(ES MODEL)
R638	1-247-807-00	CARBON	100	5%	1/6W	(ES MODEL)
R639	1-247-831-00	CARBON	1K	5%	1/6W	(ES MODEL)
R640	1-247-815-00	CARBON	220	5%	1/6W	(ES MODEL)
R641	1-247-823-00	CARBON	470	5%	1/6W	(ES MODEL)
R643	1-247-875-00	CARBON	68K	5%	1/6W	
R650	1-249-437-11	CARBON	47K	5%	1/6W	
R651	1-247-867-00	CARBON	33K	5%	1/6W	
R652	1-247-831-00	CARBON	1K	5%	1/6W	
R654	1-247-831-00	CARBON	1K	5%	1/6W	
R655	1-247-831-00	CARBON	1K	5%	1/6W	
R656	1-247-825-00	CARBON	560	5%	1/6W	
R657	1-247-831-00	CARBON	1K	5%	1/6W	
R701	1-247-825-00	CARBON	560	5%	1/6W	
R702	1-249-421-11	CARBON	2.2K	5%	1/6W	
R703	1-247-867-00	CARBON	33K	5%	1/6W	
R704	1-247-813-00	CARBON	180	5%	1/6W	
R705	1-247-813-00	CARBON	180	5%	1/6W	
R710	1-249-429-11	CARBON	10K	5%	1/6W	
R712	1-249-419-11	CARBON	1.5K	5%	1/6W	
R714	1-247-811-00	CARBON	150	5%	1/6W	
R737	1-249-429-11	CARBON	10K	5%	1/6W	
R738	1-249-429-11	CARBON	10K	5%	1/6W	
R739	1-249-429-11	CARBON	10K	5%	1/6W	
R740	1-247-861-00	CARBON	18K	5%	1/6W	
R741	1-249-429-11	CARBON	10K	5%	1/6W	
R743	1-247-879-00	CARBON	100K	5%	1/6W	
R744	1-247-879-00	CARBON	100K	5%	1/6W	

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description				Remark
R745	1-247-840-00	CARBON	2.4K	5%	1/6W	
R746	1-247-815-00	CARBON	220	5%	1/6W	
R747	1-247-857-00	CARBON	12K	5%	1/6W	
R748	1-249-421-11	CARBON	2.2K	5%	1/6W	
R749	1-247-815-00	CARBON	220	5%	1/6W	
R750	1-247-807-00	CARBON	100	5%	1/6W	
R753	1-249-429-11	CARBON	10K	5%	1/6W	
R754	1-249-421-11	CARBON	2.2K	5%	1/6W	
R778	1-249-437-11	CARBON	47K	5%	1/6W	
R802	1-247-831-00	CARBON	1K	5%	1/6W	
R803	1-249-437-11	CARBON	47K	5%	1/6W	
R804	1-249-437-11	CARBON	47K	5%	1/6W	
R805	1-247-883-00	CARBON	150K	5%	1/6W	
R806	1-247-883-00	CARBON	150K	5%	1/6W	
R807	1-247-829-00	CARBON	820	5%	1/6W	
R809	1-247-891-00	CARBON	330K	5%	1/6W	(ES MODEL)
R811	1-247-843-00	CARBON	3.3K	5%	1/6W	
R814	1-247-903-00	CARBON	1M	5%	1/6W	
R815	1-247-831-00	CARBON	1K	5%	1/6W	
R816	1-247-899-00	CARBON	680K	5%	1/6W	
R817	1-215-450-00	METAL	16K	1%	1/6W	
R818	1-215-448-91	METAL	13K	1%	1/6W	
R821	1-249-421-11	CARBON	2.2K	5%	1/6W	(ES MODEL)
R822	1-249-421-11	CARBON	2.2K	5%	1/6W	(ES MODEL)
R823	1-247-867-00	CARBON	33K	5%	1/6W	
R824	1-247-863-00	CARBON	22K	5%	1/6W	
R825	1-247-831-00	CARBON	1K	5%	1/6W	
R830	1-247-831-00	CARBON	1K	5%	1/6W	
R831	1-247-831-00	CARBON	1K	5%	1/6W	
R832	1-247-831-00	CARBON	1K	5%	1/6W	
R833	1-247-877-00	CARBON	82K	5%	1/6W	
R834	1-249-419-11	CARBON	1.5K	5%	1/6W	
R835	1-247-831-00	CARBON	1K	5%	1/6W	
R836	1-247-819-00	CARBON	330	5%	1/6W	
R837	1-247-819-00	CARBON	330	5%	1/6W	
R838	1-247-863-00	CARBON	22K	5%	1/6W	
R839	1-247-847-00	CARBON	4.7K	5%	1/6W	
R840	1-247-831-00	CARBON	1K	5%	1/6W	
R841	1-247-827-00	CARBON	680	5%	1/6W	
R843	1-247-825-00	CARBON	560	5%	1/6W	
R844	1-247-877-00	CARBON	82K	5%	1/6W	
R845	1-249-437-11	CARBON	47K	5%	1/6W	
R846	1-247-867-00	CARBON	33K	5%	1/6W	
R848	1-247-811-00	CARBON	150	5%	1/6W	
R849	1-247-803-00	CARBON	68	5%	1/6W	
R853	1-247-803-00	CARBON	68	5%	1/6W	
R854	1-247-804-00	CARBON	75	5%	1/6W	
R855	1-247-831-00	CARBON	1K	5%	1/6W	
R856	1-247-831-00	CARBON	1K	5%	1/6W	
R867	1-247-853-00	CARBON	8.2K	5%	1/6W	
R870	1-247-818-00	CARBON	300	5%	1/6W	
R871	1-247-818-00	CARBON	300	5%	1/6W	
R872	1-247-825-00	CARBON	560	5%	1/6W	

Ref.No	Part No.	Description				Remark
R876	1-247-849-00	CARBON	5.6K	5%	1/6W	
R877	1-215-445-00	METAL	10K	1%	1/6W	
R878	1-215-433-00	METAL	3.3K	1%	1/6W	
R880	1-249-429-11	CARBON	10K	5%	1/6W	
R881	1-247-831-00	CARBON	1K	5%	1/6W	
R882	1-247-879-00	CARBON	100K	5%	1/6W	
R883	⚠.1-247-807-91	CARBON	100	5%	1/6W	
R884	1-247-847-00	CARBON	4.7K	5%	1/6W	
R885	1-247-817-00	CARBON	270	5%	1/6W	
R886	1-247-833-00	CARBON	1.2K	5%	1/6W	
R888	1-247-863-00	CARBON	22K	5%	1/6W	
R892	⚠.1-247-831-91	CARBON	1K	5%	1/6W	
R893	1-247-847-00	CARBON	4.7K	5%	1/6W	
R894	1-247-823-00	CARBON	470	5%	1/6W	
R895	1-247-823-00	CARBON	470	5%	1/6W	
R896	1-249-429-11	CARBON	10K	5%	1/6W	
R897	1-249-429-11	CARBON	10K	5%	1/6W	
R898	1-247-887-00	CARBON	220K	5%	1/6W	
R899	1-247-887-00	CARBON	220K	5%	1/6W	
R918	1-247-831-00	CARBON	1K	5%	1/6W	
R919	⚠.1-212-857-51	FUSIBLE	10	5%	1/4W	F
R920	1-249-419-11	CARBON	1.5K	5%	1/6W	
R921	1-247-857-00	CARBON	12K	5%	1/6W	
R922	1-247-859-00	CARBON	15K	5%	1/6W	
R926	1-247-863-00	CARBON	22K	5%	1/6W	
R935	1-247-843-00	CARBON	3.3K	5%	1/6W	
R950	1-247-830-00	CARBON	910	5%	1/6W	
R963	1-249-429-11	CARBON	10K	5%	1/6W	
R964	1-247-858-00	CARBON	13K	5%	1/6W	
R965	1-247-857-00	CARBON	12K	5%	1/6W	
R966	1-247-866-00	CARBON	30K	5%	1/6W	
R967	1-247-875-00	CARBON	68K	5%	1/6W	
R968	1-247-853-00	CARBON	8.2K	5%	1/6W	
R969	1-247-841-00	CARBON	2.7K	5%	1/6W	
R970	1-247-863-00	CARBON	22K	5%	1/6W	
R971	1-249-429-11	CARBON	10K	5%	1/6W	
R972	1-249-429-11	CARBON	10K	5%	1/6W	
R974	1-249-419-11	CARBON	1.5K	5%	1/6W	
R975	1-247-811-00	CARBON	150	5%	1/6W	
R976	1-247-809-00	CARBON	120	5%	1/6W	
R977	1-247-831-00	CARBON	1K	5%	1/6W	
R979	1-247-825-00	CARBON	560	5%	1/6W	
R980	1-247-867-00	CARBON	33K	5%	1/6W	
R981	1-247-853-00	CARBON	8.2K	5%	1/6W	
R982	1-247-853-00	CARBON	8.2K	5%	1/6W	
R983	1-247-792-00	CARBON	0	5%	1/6W	
R986	1-249-421-11	CARBON	2.2K	5%	1/6W	
R988	1-247-825-00	CARBON	560	5%	1/6W	
R989	1-247-853-00	CARBON	8.2K	5%	1/6W	
R990	1-247-867-00	CARBON	33K	5%	1/6W	
R991	1-247-853-00	CARBON	8.2K	5%	1/6W	
R992	1-247-792-00	CARBON	0	5%	1/6W	
R995	1-247-803-00	CARBON	68	5%	1/6W	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV001	1-228-989-00	RES, ADJ, METAL GLAZE 470 (ES MODEL)	
RV002	1-228-994-00	RES, ADJ, CARBON 10K	
RV003	1-228-996-00	RES, ADJ, CARBON 47K	
RV004	1-228-989-00	RES, ADJ, METAL GLAZE 470	
RV005	1-228-996-00	RES, ADJ, CARBON 47K	
RV006	1-228-995-00	RES, ADJ, CARBON 22K	
RV007	1-228-994-00	RES, ADJ, CARBON 10K	
RV008	1-228-991-00	RES, ADJ, CARBON 2.2K	
RV009	1-228-996-00	RES, ADJ, CARBON 47K	
RV010	1-228-995-00	RES, ADJ, CARBON 22K	
RV013	1-228-996-00	RES, ADJ, CARBON 47K	
RV014	1-228-994-00	RES, ADJ, CARBON 10K	
RV015	1-228-989-00	RES, ADJ, METAL GLAZE 470	
RV016	1-228-990-00	RES, ADJ, CARBON 1K	
RV019	1-228-993-00	RES, ADJ, METAL GLAZE 4.7K	
RV020	1-228-990-00	RES, ADJ, CARBON 1K	
RV021	1-228-996-00	RES, ADJ, CARBON 47K	
RV022	1-228-993-00	RES, ADJ, METAL GLAZE 4.7K	
RV401	1-228-994-00	RES, ADJ, METAL GLAZE 10K	
RV501	1-228-989-00	RES, ADJ, CARBON 470	
RV702	1-228-995-00	RES, ADJ, CARBON 22K	

SWITCH

Ref.No	Part No.	Description
SW901	1-570-283-11	SWITCH, SLIDE

TRANSFORMER

Ref.No	Part No.	Description
T001	1-426-093-00	COIL, REC C BPT
T002	1-409-353-00	COIL, TRAP

CRYSTAL

Ref.No	Part No.	Description
X001	1-527-345-00	CRYSTAL, OSC (3.58MHz)

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*A-6711-659-A RP-31 BOARD, COMPLETE
****

CAPACITOR

Ref.No	Part No.	Description			Remark
C703	1-161-013-00	CERAMIC	0.01MF	10%	25V
C704	1-123-647-00	ELECT	47MF	20%	6.3V
C705	1-123-610-00	ELECT	0.47MF	20%	50V
C706	1-130-483-00	MYLAR	0.01MF	5%	50V
C707	1-123-620-00	ELECT	10MF	20%	25V
C708	1-161-013-00	CERAMIC	0.01MF	10%	25V
C712	1-161-013-00	CERAMIC	0.01MF	10%	25V
C717	1-102-529-00	CERAMIC	100PF	5%	50V
C718	1-102-973-00	CERAMIC	100PF	5%	50V
C719	1-102-824-21	CERAMIC	470PF	5%	50V
C720	1-102-120-00	CERAMIC	0.0018MF	10%	50V
C721	1-102-510-00	CERAMIC	12PF	5%	50V
C722	1-102-518-00	CERAMIC	33PF	5%	50V
C723	1-123-822-00	ELECT	47MF	20%	10V
C724	1-123-620-00	ELECT	10MF	20%	25V
C725	1-130-483-00	MYLAR	0.01MF	5%	50V
C726	1-123-610-00	ELECT	0.47MF	20%	50V
C727	1-123-617-00	ELECT	10MF	20%	16V
C733	1-161-013-00	CERAMIC	0.01MF	10%	25V
C734	1-161-013-00	CERAMIC	0.01MF	10%	25V
C751	1-161-013-00	CERAMIC	0.01MF	10%	25V
C754	1-161-013-00	CERAMIC	0.01MF	10%	25V
C755	1-161-013-00	CERAMIC	0.01MF	10%	25V
C760	1-130-013-00	CERAMIC	0.01MF	10%	25V
C761	1-130-013-00	CERAMIC	0.01MF	10%	25V
C762	1-123-611-00	ELECT	1MF	20%	50V
C763	1-123-611-00	ELECT	1MF	20%	50V
C764	1-123-620-00	ELECT	10MF	20%	25V
C765	1-161-013-00	CERAMIC	0.01MF	10%	25V
C766	1-102-518-00	CERAMIC	33PF	5%	50V
C767	1-161-013-00	CERAMIC	0.01MF	10%	25V
C768	1-161-013-00	CERAMIC	0.01MF	10%	25V
C769	1-161-013-00	CERAMIC	0.01MF	10%	25V
C770	1-161-013-00	CERAMIC	0.01MF	10%	25V
C771	1-123-620-00	ELECT	10MF	20%	25V
C773	1-123-617-00	ELECT	10MF	20%	16V
C774	1-102-851-00	CERAMIC	15PF	5%	50V
C775	1-102-851-00	CERAMIC	15PF	5%	50V
C780	1-161-013-00	CERAMIC	0.01MF	10%	25V
C781	1-123-620-00	ELECT	10MF	20%	25V
C782	1-161-013-00	CERAMIC	0.01MF	10%	25V
C784	1-161-013-00	CERAMIC	0.01MF	10%	25V
C791	1-161-013-00	CERAMIC	0.01MF	10%	25V
C792	1-123-620-00	ELECT	10MF	20%	25V
C801	1-123-822-00	ELECT	47MF	20%	10V
C802	1-123-611-00	ELECT	1MF	20%	50V
C803	1-161-013-00	CERAMIC	0.01MF	10%	25V
C805	1-161-013-00	CERAMIC	0.01MF	10%	25V
C806	1-161-013-00	CERAMIC	0.01MF	10%	25V
C807	1-102-851-00	CERAMIC	15PF	5%	50V
C808	1-102-978-00	CERAMIC	220PF	5%	50V
C810	1-161-013-00	CERAMIC	0.01MF	10%	25V
C811	1-161-013-00	CERAMIC	0.01MF	10%	25V
C812	1-161-013-00	CERAMIC	0.01MF	10%	25V
C813	1-161-013-00	CERAMIC	0.01MF	10%	25V
C821	1-123-617-00	ELECT	10MF	20%	16V
C831	1-123-822-00	ELECT	47MF	20%	10V
C832	1-102-513-00	CERAMIC	18PF	5%	50V
C833	1-102-513-00	CERAMIC	18PF	5%	50V
C841	1-161-059-00	CERAMIC	0.047MF	10%	25V

CONNECTOR

Ref.No	Part No.	Description
CN701	*1-560-900-00	PIN, CONNECTOR 12P
CN702	*1-560-894-00	PIN, CONNECTOR 6P
CN703	*1-564-030-00	PIN, CONNECTOR 5P
CN704	*1-560-900-00	PIN, CONNECTOR 12P

When indicating parts by reference number, please include the board name.

DIODE

Ref.No	Part No.	Description	Remark
D701	8-719-911-19	DIODE 1SS119	
D702	8-719-911-19	DIODE 1SS119	

IC

Ref.No	Part No.	Description	Remark
IC701	8-752-004-50	IC CX20045	
IC703	8-759-103-17	IC UPC1521HA	
IC704	8-752-006-10	IC CX20061	
IC705	8-759-200-60	IC TA7060AP	

COIL

Ref.No	Part No.	Description	Remark
L701	1-408-877-00	MICRO INDUCTOR 0.22UH	
L702	1-408-621-00	MICRO INDUCTOR 330UH	
L703	1-408-623-00	MICRO INDUCTOR 470UH	
L706	1-408-421-00	MICRO INDUCTOR 100UH	
L709	1-408-616-21	MICRO INDUCTOR 120UH	
L711	1-408-605-00	MICRO INDUCTOR 15UH	
L712	1-408-877-00	MICRO INDUCTOR 0.22UH	
L714	1-408-621-00	MICRO INDUCTOR 330UH	
L716	1-408-623-00	MICRO INDUCTOR 470UH	
L720	1-408-604-00	MICRO INDUCTOR 12UH	
L721	1-408-623-00	MICRO INDUCTOR 470UH	
L761	1-408-623-00	MICRO INDUCTOR 470UH	
L762	1-408-623-00	MICRO INDUCTOR 470UH	
L763	1-408-605-00	MICRO INDUCTOR 15UH	
L764	1-408-623-00	MICRO INDUCTOR 470UH	
L771	1-408-623-00	MICRO INDUCTOR 470UH	
L772	1-408-599-11	MICRO INDUCTOR 4.7UH	
L773	1-408-599-11	MICRO INDUCTOR 4.7UH	
L774	1-408-623-00	MICRO INDUCTOR 470UH	
L775	1-410-162-11	MICRO INDUCTOR 470UH	
L801	1-408-607-21	MICRO INDUCTOR 22UH	
L802	1-408-606-00	MICRO INDUCTOR 18UH	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q703	8-729-245-83	TRANSISTOR 2SC2458	
Q704	8-729-245-83	TRANSISTOR 2SC2458	
Q705	8-729-245-83	TRANSISTOR 2SC2458	
Q706	8-729-245-83	TRANSISTOR 2SC2458	
Q707	8-729-900-89	TRANSISTOR DTC144ES	
Q761	8-729-245-83	TRANSISTOR 2SC2458	

RESISTOR

Ref.No	Part No.	Description				Remark
R534	1-247-833-00	CARBON	1.2K	5%	1/6W	
R701	1-247-831-00	CARBON	1K	5%	1/6W	
R704	1-247-857-00	CARBON	12K	5%	1/6W	
R709	1-247-839-00	CARBON	2.2K	5%	1/6W	
R712	1-247-831-00	CARBON	1K	5%	1/6W	
R713	1-247-831-00	CARBON	1K	5%	1/6W	
R717	1-247-833-00	CARBON	1.2K	5%	1/6W	
R720	1-247-833-00	CARBON	1.2K	5%	1/6W	
R722	1-247-829-00	CARBON	820	5%	1/6W	
R745	1-247-807-00	CARBON	100	5%	1/6W	
R748	1-249-419-11	CARBON	1.5K	5%	1/6W	
R749	1-249-419-11	CARBON	1.5K	5%	1/6W	
R752	1-249-429-11	CARBON	10K	5%	1/6W	
R753	1-249-421-11	CARBON	2.2K	5%	1/6W	
R754	1-247-815-00	CARBON	220	5%	1/6W	
R755	1-247-849-00	CARBON	5.6K	5%	1/6W	
R756	1-247-870-00	CARBON	43K	5%	1/6W	
R757	1-249-429-11	CARBON	10K	5%	1/6W	
R761	1-247-849-00	CARBON	5.6K	5%	1/6W	
R762	1-247-870-00	CARBON	43K	5%	1/6W	
R763	1-249-419-11	CARBON	1.5K	5%	1/6W	
R764	1-247-833-00	CARBON	1.2K	5%	1/6W	
R765	1-247-831-00	CARBON	1K	5%	1/6W	
R771	1-247-821-00	CARBON	390	5%	1/6W	
R772	1-247-821-00	CARBON	390	5%	1/6W	
R801	1-247-797-00	CARBON	39	5%	1/6W	
R802	1-247-831-00	CARBON	1K	5%	1/6W	
R806	1-247-845-00	CARBON	3.9K	5%	1/6W	
R809	1-247-863-00	CARBON	22K	5%	1/6W	
R810	1-247-863-00	CARBON	22K	5%	1/6W	
R811	1-247-827-00	CARBON	680	5%	1/6W	
R812	1-247-829-00	CARBON	820	5%	1/6W	
R814	1-249-421-11	CARBON	2.2K	5%	1/6W	
R815	1-249-421-11	CARBON	2.2K	5%	1/6W	
R816	1-247-831-00	CARBON	1K	5%	1/6W	
R817	1-247-831-00	CARBON	1K	5%	1/6W	
R841	1-247-797-00	CARBON	39	5%	1/6W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV701	1-228-920-00	RES, ADJ, CARBON 2.2K	
RV702	1-228-920-00	RES, ADJ, CARBON 2.2K	
RV704	1-228-920-00	RES, ADJ, CARBON 2.2K	
RV705	1-228-919-00	RES, ADJ, CARBON 1K	
RV706	1-228-919-00	RES, ADJ, CARBON 1K	

TRANSFORMER

Ref.No	Part No.	Description	Remark
T701	1-448-300-11	TRANSFORMER, STEP UP	

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*A-6711-660-A DH-4 BOARD, COMPLETE
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CAPACITOR

Ref.No	Part No.	Description				Remark
C320	1-161-013-00	CERAMIC	0.01MF	10%	25V	
C321	1-123-620-00	ELECT	10MF	20%	25V	
C322	1-161-059-00	CERAMIC	0.047MF	10%	25V	
C323	1-123-620-00	ELECT	10MF	20%	25V	
C324	1-123-611-00	ELECT	1MF	20%	50V	
C325	1-123-619-00	ELECT	4.7MF	20%	50V	
C326	1-161-059-00	CERAMIC	0.047MF	10%	25V	
C327	1-161-059-00	CERAMIC	0.047MF	10%	25V	
C328	1-123-611-00	ELECT	1MF	20%	50V	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
C329	1-161-013-00	CERAMIC	0.01MF	10%	25V
C330	1-123-620-00	ELECT	10MF	20%	25V
C331	1-123-622-00	ELECT	22MF	20%	16V
C332	1-161-059-00	CERAMIC	0.047MF	10%	25V
C333	1-161-059-00	CERAMIC	0.047MF	10%	25V
C334	1-102-978-00	CERAMIC	220PF	5%	50V
C360	1-123-620-00	ELECT	10MF	20%	25V
C372	1-123-620-00	ELECT	10MF	20%	25V
C373	1-161-013-00	CERAMIC	0.01MF	10%	25V
C501	1-161-025-00	CERAMIC	0.1MF	10%	25V
C502	1-161-013-00	CERAMIC	0.01MF	10%	25V
C503	1-102-516-00	CERAMIC	27PF	5%	50V
C505	1-161-025-00	CERAMIC	0.1MF	10%	25V
C506	1-161-025-00	CERAMIC	0.1MF	10%	25V
C507	1-161-025-00	CERAMIC	0.1MF	10%	25V
C508	1-161-013-00	CERAMIC	0.01MF	10%	25V
C509	1-123-620-00	ELECT	10MF	20%	25V
C510	1-123-620-00	ELECT	10MF	20%	25V
C511	1-161-013-00	CERAMIC	0.01MF	10%	25V
C513	1-161-025-00	CERAMIC	0.1MF	10%	25V
C514	1-161-013-00	CERAMIC	0.01MF	10%	25V
C515	1-123-620-00	ELECT	10MF	20%	25V
C520	1-161-013-00	CERAMIC	0.01MF	10%	25V
C521	1-102-959-00	CERAMIC	22PF	5%	50V
C522	1-161-013-00	CERAMIC	0.01MF	10%	25V
C601	1-123-822-00	ELECT	47MF	20%	10V
C602	1-123-822-00	ELECT	47MF	20%	10V
C603	1-123-619 00	ELECT	4.7MF	20%	50V
C604	1-123-619-00	ELECT	4.7MF	20%	50V
C605	1-123-611-00	ELECT	1MF	20%	50V
C606	1-123-611-00	ELECT	1MF	20%	50V
C607	1-123-620-00	ELECT	10MF	20%	25V
C608	1-123-333-00	ELECT	100MF	20%	16V
C609	1-102-973-00	CERAMIC	100PF	5%	50V
C610	1-102-973-00	CERAMIC	100PF	5%	50V
C611	1-123-620-00	ELECT	10MF	20%	25V
C729	1-102-519-00	CERAMIC	36PF	5%	50V
C746	1-161-013-00	CERAMIC	0.01MF	10%	25V
C747	1-161-059-00	CERAMIC	0.047MF	10%	25V
C748	1-161-013-00	CERAMIC	0.01MF	10%	25V
C801	1-123-621-00	ELECT	10MF	20%	25V
C802	1-123-620-00	ELECT	10MF	20%	25V
C803	1-161-013-00	CERAMIC	0.01MF	10%	25V
C804	1-123-821-00	ELECT	47MF	20%	16V
C805	1-102-961-00	CERAMIC	27PF	5%	50V
C806	1-123-619-00	ELECT	4.7MF	20%	50V
C811	1-102-508-00	CERAMIC	10PF	0.5PF	50V

CONNECTOR

Ref.No	Part No.	Description	Remark
CN501	*1-564-035-31	PIN, CONNECTOR 10P	
CN504	*1-564-031-00	PIN, CONNECTOR 6P	
CN505	*1-560-895-00	PIN, CONNECTOR 7P	
CN506	*1-560-891-00	PIN, CONNECTOR 3P	
CN507	*1-560-890-00	PIN, CONNECTOR 2P	
CN508	*1-564-031-00	PIN, CONNECTOR 6P	
CN509	*1-564-028-00	PIN, CONNECTOR 3P	
CN510	*1-560-891-00	PIN, CONNECTOR 3P	

DIODE

Ref.No	Part No.	Description	Remark
D310	8-719-911-19	DIODE 1SS119	
D312	8-719-911-19	DIODE 1SS119	
D313	8-719-911-19	DIODE 1SS119	
D501	8-719-911-19	DIODE 1SS119	
D601	8-719-911-19	DIODE 1SS119	
D602	8-719-901-33	DIODE 1SS133	
D603	8-719-901-33	DIODE 1SS133	

IC

Ref.No	Part No.	Description	Remark
IC501	8-759-145-58	IC UPC4558C	
IC601	8-759-745-56	IC NJM4556D	

COIL

Ref.No	Part No.	Description	Remark
L301	1-407-510-00	MICRO INDUCTOR 33MMH	
L302	1-408-429-00	MICRO INDUCTOR 470UH	
L303	1-408-429-00	MICRO INDUCTOR 470UH	
L503	1-408-415-00	MICRO INDUCTOR 33UH	
L504	1-408-420-00	MICRO INDUCTOR 82UH	
L510	1-408-411-00	MICRO INDUCTOR 15UH	
L715	1-408-408-00	MICRO INDUCTOR 8.2UH	
L765	1-408-429-00	MICRO INDUCTOR 470UH	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q301	8-729-603-30	TRANSISTOR 2SC403SP	
Q302	8-729-245-83	TRANSISTOR 2SC2458	
Q303	8-729-245-83	TRANSISTOR 2SC2458	
Q304	8-729-245-83	TRANSISTOR 2SC2458	
Q305	8-729-245-83	TRANSISTOR 2SC2458	
Q306	8-729-245-83	TRANSISTOR 2SC2458	
Q307	8-729-204-83	TRANSISTOR 2SA1048	
Q308	8-729-204-83	TRANSISTOR 2SA1048	
Q309	8-729-245-83	TRANSISTOR 2SC2458	
Q310	8-729-245-83	TRANSISTOR 2SC2458	
Q311	8-729-900-89	TRANSISTOR DTC144ES	
Q312	8-729-900-89	TRANSISTOR DTC144ES	
Q502	8-729-603-30	TRANSISTOR 2SC403SP	
Q503	8-729-603-30	TRANSISTOR 2SC403SP	
Q504	8-729-245-83	TRANSISTOR 2SC2458	
Q505	8-729-245-83	TRANSISTOR 2SC2458	
Q506	8-729-204-83	TRANSISTOR 2SA1048	
Q507	8-729-204-83	TRANSISTOR 2SA1048	
Q508	8-729-245-83	TRANSISTOR 2SC2458	
Q509	8-729-245-83	TRANSISTOR 2SC2458	
Q510	8-729-245-83	TRANSISTOR 2SC2458	
Q511	8-729-245-83	TRANSISTOR 2SC2458	
Q512	8-729-178-54	TRANSISTOR 2SC2785	
Q513	8-729-900-36	TRANSISTOR DTC124ES	
Q601	8-729-245-83	TRANSISTOR 2SC2458	
Q602	8-729-245-83	TRANSISTOR 2SC2458	
Q706	8-729-245-83	TRANSISTOR 2SC2458	

When indicating parts by reference number, please include the board name.

DH-4

Ref.No	Part No.	Description				Remark
Q801	8-729-245-83	TRANSISTOR 2SC2458				
Q802	8-729-245-83	TRANSISTOR 2SC2458				
		RESISTOR				
R330	1-247-841-00	CARBON	2.7K	5%	1/6W	
R331	1-247-861-00	CARBON	18K	5%	1/6W	
R332	1-247-867-00	CARBON	33K	5%	1/6W	
R333	1-249-429-11	CARBON	10K	5%	1/6W	
R334	1-247-841-00	CARBON	2.7K	5%	1/6W	
R335	1-249-437-11	CARBON	47K	5%	1/6W	
R336	1-249-434-11	CARBON	27K	5%	1/6W	
R337	1-247-831-00	CARBON	1K	5%	1/6W	
R338	1-247-829-00	CARBON	820	5%	1/6W	
R339	1-247-831-00	CARBON	1K	5%	1/6W	
R340	1-215-413-00	METAL	470	1%	1/6W	
R341	1-215-433-00	METAL	3.3K	1%	1/6W	
R342	1-215-405-00	METAL	220	1%	1/6W	
R343	1-215-433-00	METAL	3.3K	1%	1/6W	
R344	1-215-451-00	METAL	18K	1%	1/6W	
R345	1-249-429-11	CARBON	10K	5%	1/6W	
R346	1-249-429-11	CARBON	10K	5%	1/6W	
R347	1-247-831-00	CARBON	1K	5%	1/6W	
R348	1-247-815-00	CARBON	220	5%	1/6W	
R349	1-249-429-11	CARBON	10K	5%	1/6W	
R350	1-249-429-11	CARBON	10K	5%	1/6W	
R351	1-249-437-11	CARBON	47K	5%	1/6W	
R354	1-247-879-00	CARBON	100K	5%	1/6W	
R355	1-247-827-00	CARBON	680K	5%	1/6W	
R356	1-247-843-00	CARBON	3.3K	5%	1/6W	
R357	1-247-857-00	CARBON	12K	5%	1/6W	
R358	1-247-831-00	CARBON	1K	5%	1/6W	
R361	1-247-807-00	CARBON	100	5%	1/6W	
R364	1-247-811-00	CARBON	150	5%	1/6W	
R365	1-249-429-11	CARBON	10K	5%	1/6W	
R366	1-249-429-11	CARBON	10K	5%	1/6W	
R367	1-249-421-11	CARBON	2.2K	5%	1/6W	
R368	1-247-831-00	CARBON	1K	5%	1/6W	
R501	1-249-434-11	CARBON	27K	5%	1/6W	
R502	1-247-859-00	CARBON	15K	5%	1/6W	
R503	1-247-831-00	CARBON	1K	5%	1/6W	
R505	1-247-823-00	CARBON	470	5%	1/6W	
R507	1-247-831-00	CARBON	1K	5%	1/6W	
R509	1-247-809-00	CARBON	120	5%	1/6W	
R510	1-247-831-00	CARBON	1K	5%	1/6W	
R511	1-247-809-00	CARBON	120	5%	1/6W	
R513	1-247-819-00	CARBON	330	5%	1/6W	
R514	1-247-831-00	CARBON	1K	5%	1/6W	
R515	1-247-819-00	CARBON	330	5%	1/6W	
R516	1-247-807-00	CARBON	100	5%	1/6W	
R519	1-247-799-00	CARBON	47	5%	1/6W	
R520	1-247-831-00	CARBON	1K	5%	1/6W	
R521	1-247-799-00	CARBON	47	5%	1/6W	
R522	1-247-863-00	CARBON	22K	5%	1/6W	
R523	1-215-445-00	METAL	10K	1%	1/6W	
R524	1-215-445-00	METAL	10K	1%	1/6W	
R525	1-215-445-00	METAL	10K	1%	1/6W	
R526	1-247-831-00	CARBON	1K	5%	1/6W	
R527	1-215-445-00	METAL	10K	1%	1/6W	
R528	1-247-889-00	CARBON	270K	5%	1/6W	
R529	1-215-469-00	METAL	100K	1%	1/6W	
R530	1-247-815-00	CARBON	220	5%	1/6W	
R531	1-247-815-00	CARBON	220	5%	1/6W	
R532	1-249-429-11	CARBON	10K	5%	1/6W	
R533	1-249-429-11	CARBON	10K	5%	1/6W	
R535	1-249-434-11	CARBON	27K	5%	1/6W	
R536	1-247-843-00	CARBON	3.3K	5%	1/6W	
R537	1-247-863-00	CARBON	22K	5%	1/6W	
R538	1-247-863-00	CARBON	22K	5%	1/6W	
R539	1-247-863-00	CARBON	22K	5%	1/6W	
R561	1-247-831-00	CARBON	1K	5%	1/6W	
R562	1-247-819-00	CARBON	330	5%	1/6W	
R563	1-249-421-11	CARBON	2.2K	5%	1/6W	
R564	1-215-429-00	METAL	2.2K	1%	1/6W	
R601	1-247-799-00	CARBON	47	5%	1/6W	
R602	1-249-429-11	CARBON	10K	5%	1/6W	
R603	1-247-799-00	CARBON	47	5%	1/6W	
R604	1-247-867-00	CARBON	33K	5%	1/6W	
R605	1-247-867-00	CARBON	33K	5%	1/6W	
R606	1-247-877-00	CARBON	82K	5%	1/6W	
R607	1-247-887-00	CARBON	220K	5%	1/6W	
R608	1-247-877-00	CARBON	82K	5%	1/6W	
R609	1-249-429-11	CARBON	10K	5%	1/6W	
R611	1-247-887-00	CARBON	220K	5%	1/6W	
R612	1-247-887-00	CARBON	220K	5%	1/6W	
R613	1-249-429-11	CARBON	10K	5%	1/6W	
R614	1-247-863-00	CARBON	22K	5%	1/6W	
R680	1-247-887-00	CARBON	220K	5%	1/6W	
R724	1-247-824-00	CARBON	510	5%	1/6W	
R725	1-247-824-00	CARBON	510	5%	1/6W	
R728	1-247-825-00	CARBON	560	5%	1/6W	
R750	1-247-831-00	CARBON	1K	5%	1/6W	
R752	1-247-858-00	CARBON	13K	5%	1/6W	
R753	1-247-831-00	CARBON	1K	5%	1/6W	
R754	1-247-829-00	CARBON	820	5%	1/6W	
R801	1-249-421-11	CARBON	2.2K	5%	1/6W	
R802	1-247-815-00	CARBON	220	5%	1/6W	
R803	1-247-847-00	CARBON	4.7K	5%	1/6W	
R804	1-247-887-00	CARBON	220K	5%	1/6W	
R805	1-247-879-00	CARBON	100K	5%	1/6W	
R806	1-247-831-00	CARBON	1K	5%	1/6W	
R807	1-247-823-00	CARBON	470	5%	1/6W	
R808	1-249-421-11	CARBON	2.2K	5%	1/6W	
R809	1-247-823-00	CARBON	470	5%	1/6W	
		VARIABLE RESISTOR				
RV301	1-228-990-00	RES, ADJ, CARBON 1K				
RV302	1-228-991-00	RES, ADJ, CARBON 2.2K				
RV501	1-228-991-00	RES, ADJ, METAL GLAZE 2.2K				

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
		AF-14 BOARD ************			
	*A-6713-237-A	B-697 BOARD, COMPLETE **********************			
	*3-684-072-01	LID, BOTTOM, AF SHIELD CASE(S)			
	*3-684-087-01	CASE (S) (MAIN), SHIELD, AF			
	3-697-657-01	LID, BOTTOM, AF SHIELD CASE			
		BAND PASS FILTER			
BPF001	1-235-367-11	B.P.F			
BPF002	1-235-367-11	B.P.F			
BPF003	1-235-366-11	B.P.F			
BPF004	1-235-366-11	B.P.F			
		CAPACITOR			
C001	1-123-318-00	ELECT	33MF	20%	16V
C002	1-161-025-00	CERAMIC	0.1MF	10%	25V
C003	1-161-025-00	CERAMIC	0.1MF	10%	25V
C004	1-161-025-00	CERAMIC	0.1MF	10%	25V
C005	1-101-004-00	CERAMIC	0.01MF		50V
C007	1-102-518-00	CERAMIC	33PF	5%	50V
C008	1-102-518-00	CERAMIC	33PF	5%	50V
C009	1-123-318-00	ELECT	33MF	20%	16V
C010	1-161-025-00	CERAMIC	0.1MF	10%	25V
C011	1-161-025-00	CERAMIC	0.1MF	10%	25V
C012	1-161-025-00	CERAMIC	0.1MF	10%	25V
C013	1-101-004-00	CERAMIC	0.01MF		50V
C015	1-102-822-00	CERAMIC	390PF	5%	50V
C016	1-102-822-00	CERAMIC	390PF	5%	50V
C017	1-123-380-00	ELECT	1MF	20%	50V
C018	1-101-361-00	CERAMIC	150PF	10%	50V
C019	1-123-380-00	ELECT	1MF	20%	50V
C020	1-161-025-00	CERAMIC	0.1MF	10%	25V
C021	1-101-004-00	CERAMIC	0.01MF		50V
C022	1-123-332-00	ELECT	47MF	20%	16V
C023	1-161-025-00	CERAMIC	0.1MF	10%	25V
C025	1-102-978-00	CERAMIC	220PF	5%	50V
C026	1-102-978-00	CERAMIC	220PF	5%	50V
C027	1-102-522-00	CERAMIC	51PF	5%	50V
C028	1-102-531-00	CERAMIC	150PF	5%	50V
C029	1-102-531-00	CERAMIC	150PF	5%	50V
C030	1-102-520-00	CERAMIC	39PF	5%	50V
C031	1-123-356-00	ELECT	10MF	20%	16V
C033	1-101-004-00	CERAMIC	0.01MF		50V
C034	1-101-004-00	CERAMIC	0.01MF		50V
C035	1-123-382-00	ELECT	3.3MF	20%	50V
C036	1-123-382-00	ELECT	3.3MF	20%	50V
C037	1-101-004-00	CERAMIC	0.01MF		50V
C038	1-123-332-00	ELECT	47MF	20%	16V
C039	1-101-004-00	CERAMIC	0.01MF		50V
C040	1-101-004-00	CERAMIC	0.01MF		50V
C041	1-101-004-00	CERAMIC	0.01MF		50V

Ref.No	Part No.	Description			Remark
C042	1-101-004-00	CERAMIC	0.01MF		50V
C043	1-123-356-00	ELECT	10MF	20%	16V
C044	1-101-004-00	CERAMIC	0.01MF		50V
C045	1-101-004-00	CERAMIC	0.01MF		50V
C046	1-101-004-00	CERAMIC	0.01MF		50V
C047	1-123-356-00	ELECT	10MF	20%	16V
C048	1-123-356-00	ELECT	10MF	20%	16V
C049	1-123-356-00	ELECT	10MF	20%	16V
C050	1-123-318-00	ELECT	33MF	20%	16V
C051	1-123-318-00	ELECT	33MF	20%	16V
C052	1-123-356-00	ELECT	10MF	20%	16V
C053	1-123-356-00	ELECT	10MF	20%	16V
C054	1-101-004-00	CERAMIC	0.01MF		50V
C055	1-123-332-00	ELECT	47MF	20%	16V
C056	1-101-004-00	CERAMIC	0.01MF		50V
C057	1-101-004-00	CERAMIC	0.01MF		50V
C058	1-161-025-00	CERAMIC	0.1MF	10%	25V
C059	1-123-356-00	ELECT	10MF	20%	16V
C060	1-123-356-00	ELECT	10MF	20%	16V
C061	1-123-330-00	ELECT	22MF	20%	16V
C062	1-130-475-00	MYLAR	0.0022MF	5%	50V
C063	1-130-482-00	MYLAR	0.0082MF	5%	50V
C064	1-102-824-21	CERAMIC	470PF	5%	50V
C065	1-130-477-00	MYLAR	0.0033MF	5%	50V
C066	1-123-369-00	ELECT	4.7MF	20%	50V
C067	1-123-369-00	ELECT	4.7MF	20%	50V
C068	1-101-004-00	CERAMIC	0.01MF		50V
C069	1-123-333-00	ELECT	100MF	20%	16V
C070	1-123-356-00	ELECT	10MF	20%	16V
C071	1-123-332-00	ELECT	47MF	20%	16V
C072	1-123-332-00	ELECT	47MF	20%	16V
C073	1-102-958-00	CERAMIC	20PF	5%	50V
C074	1-130-485-00	MYLAR	0.015MF	5%	50V
C075	1-102-936-00	CERAMIC	3PF	0.25PF	50V
C076	1-130-485-00	MYLAR	0.015MF	5%	50V
C077	1-130-498-00	MYLAR	0.18MF	5%	50V
C078	1-130-485-00	MYLAR	0.015MF	5%	50V
C079	1-130-469-00	MYLAR	680PF	5%	50V
C080	1-130-475-00	MYLAR	0.0022MF	5%	50V
C081	1-102-936-00	CERAMIC	3PF	0.25PF	50V
C082	1-130-491-00	MYLAR	0.047MF	5%	50V
C083	1-123-330-00	ELECT	22MF	20%	16V
C084	1-130-493-00	MYLAR	0.068MF	5%	50V
C085	1-131-371-00	TANTALUM	10MF	10%	16V
C086	1-131-408-00	TANTALUM	1MF	10%	25V
C087	1-101-004-00	CERAMIC	0.01MF		50V
C088	1-123-333-00	ELECT	100MF	20%	16V
C096	1-123-356-00	ELECT	10MF	20%	16V
C100	1-123-356-00	ELECT	10MF	20%	16V
C101	1-123-332-00	ELECT	47MF	20%	16V
C102	1-123-332-00	ELECT	47MF	20%	16V
C103	1-123-381-00	ELECT	2.2MF	20%	50V
C104	1-123-332-00	ELECT	47MF	20%	16V

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description			Remark
C105	1-123-356-00	ELECT	10MF	20%	16V
C106	1-123-356-00	ELECT	10MF	20%	16V
C107	1-123-332-00	ELECT	47MF	20%	16V
C108	1-123-356-00	ELECT	10MF	20%	16V
C109	1-123-356-00	ELECT	10MF	20%	16V
C110	1-123-380-00	ELECT	1MF	20%	50V
C111	1-123-318-00	ELECT	33MF	20%	16V
C112	1-123-379-00	ELECT	0.47MF	20%	50V
C113	1-123-356-00	ELECT	10MF	20%	16V
C114	1-123-356-00	ELECT	10MF	20%	16V
C115	1-123-369-00	ELECT	4.7MF	20%	50V
C116	1-123-330-00	ELECT	22MF	20%	16V
C117	1-123-330-00	ELECT	22MF	20%	16V
C118	1-102-961-00	CERAMIC	27PF	10%	50V
C119	1-102-961-00	CERAMIC	27PF	10%	50V
C120	1-123-369-00	ELECT	4.7MF	20%	50V
C121	1-123-356-00	ELECT	10MF	20%	16V
C122	1-123-356-00	ELECT	10MF	20%	16V
C123	1-130-471-00	MYLAR	0.001MF	5%	50V
C124	1-130-471-00	MYLAR	0.001MF	5%	50V
C125	1-123-356-00	ELECT	10MF	20%	16V
C126	1-123-356-00	ELECT	10MF	20%	16V
C127	1-123-356-00	ELECT	10MF	20%	16V
C128	1-123-356-00	ELECT	10MF	20%	16V
C129	1-123-356-00	ELECT	10MF	20%	16V
C130	1-123-356-00	ELECT	10MF	20%	16V
C131	1-123-356-00	ELECT	10MF	20%	16V
C132	1-123-356-00	ELECT	10MF	20%	16V
C133	1-123-356-00	ELECT	10MF	20%	16V
C134	1-123-330-00	ELECT	22MF	20%	16V
C135	1-123-332-00	ELECT	47MF	20%	16V
C136	1-123-330-00	ELECT	22MF	20%	16V
C137	1-123-356-00	ELECT	10MF	20%	16V
C138	1-123-356-00	ELECT	10MF	20%	16V
C139	1-123-330-00	ELECT	22MF	20%	16V
C140	1-123-356-00	ELECT	10MF	20%	16V
C141	1-123-356-00	ELECT	10MF	20%	16V
C142	1-123-332-00	ELECT	47MF	20%	16V
C143	1-123-330-00	ELECT	22MF	20%	16V
C144	1-123-330-00	ELECT	22MF	20%	16V
C145	1-123-356-00	ELECT	10MF	20%	16V
C146	1-123-330-00	ELECT	22MF	20%	16V
C147	1-123-330-00	ELECT	22MF	20%	16V
C148	1-123-356-00	ELECT	10MF	20%	16V
C149	1-123-356-00	ELECT	10MF	20%	16V
C150	1-123-356-00	ELECT	10MF	20%	16V
C151	1-130-478-00	MYLAR	0.0039MF	5%	50V
C152	1-130-476-00	MYLAR	0.0027MF	5%	50V
C153	1-130-474-00	MYLAR	0.0018MF	5%	50V
C154	1-130-478-00	MYLAR	0.0039MF	5%	50V
C155	1-130-476-00	MYLAR	0.0027MF	5%	50V
C156	1-130-474-00	MYLAR	0.0018MF	5%	50V
C157	1-131-408-00	TANTALUM	1MF	10%	25V
C158	1-131-371-00	TANTALUM	10MF	10%	16V
C159	1-130-493-00	MYLAR	0.068MF	5%	50V
C160	1-123-330-00	ELECT	22MF	20%	16V
C161	1-130-491-00	MYLAR	0.047MF	5%	50V
C162	1-102-936-00	CERAMIC	3PF	0.25PF	50V
C163	1-130-475-00	MYLAR	0.0022MF	5%	50V
C164	1-130-469-00	MYLAR	680PF	5%	50V
C165	1-130-485-00	MYLAR	0.015MF	5%	50V
C166	1-130-498-00	MYLAR	0.18MF	5%	50V
C167	1-130-485-00	MYLAR	0.015MF	5%	50V
C168	1-130-485-00	MYLAR	0.015MF	5%	50V
C169	1-102-958-00	CERAMIC	20PF	5%	50V
C170	1-123-332-00	ELECT	47MF	20%	16V
C171	1-123-332-00	ELECT	47MF	20%	16V
C172	1-123-356-00	ELECT	10MF	20%	16V
C173	1-101-004-00	CERAMIC	0.01MF		50V
C174	1-123-333-00	ELECT	100MF	20%	16V
C175	1-101-004-00	CERAMIC	0.01MF		50V
C176	1-101-004-00	CERAMIC	0.01MF		50V
C177	1-123-356-00	ELECT	10MF	20%	16V
C178	1-123-356-00	ELECT	10MF	20%	16V
C179	1-123-356-00	ELECT	10MF	20%	16V
C180	1-123-318-00	ELECT	33MF	20%	16V
C181	1-123-318-00	ELECT	33MF	20%	16V
C182	1-123-356-00	ELECT	10MF	20%	16V
C183	1-123-356-00	ELECT	10MF	20%	16V
C184	1-123-381-00	ELECT	2.2MF	20%	50V
C185	1-123-380-00	ELECT	1MF	20%	50V
C186	1-123-380-00	ELECT	1MF	20%	50V
C187	1-101-004-00	CERAMIC	0.01MF		50V
C188	1-123-332-00	ELECT	47MF	20%	16V
C189	1-123-369-00	ELECT	4.7MF	20%	50V
C190	1-123-369-00	ELECT	4.7MF	20%	50V
C191	1-130-477-00	MYLAR	0.0033MF	5%	50V
C192	1-130-482-00	MYLAR	0.0082MF	5%	50V
C193	1-102-824-21	CERAMIC	470PF	5%	50V
C194	1-130-475-00	MYLAR	0.0022MF	5%	50V
C195	1-123-330-00	ELECT	22MF	20%	16V
C196	1-123-356-00	ELECT	10MF	20%	16V
C197	1-123-356-00	ELECT	10MF	20%	16V
C198	1-123-379-00	ELECT	0.47MF	20%	50V
C199	1-101-004-00	CERAMIC	0.01MF		50V
C200	1-101-004-00	CERAMIC	0.01MF		50V
C201	1-101-004-00	CERAMIC	0.01MF		50V
C202	1-101-004-00	CERAMIC	0.01MF		50V
C203	1-101-004-00	CERAMIC	0.01MF		50V
C204	1-101-004-00	CERAMIC	0.01MF		50V
C205	1-123-382-00	ELECT	3.3MF	20%	50V
C207	1-123-382-00	ELECT	3.3MF	20%	50V
C208	1-101-004-00	CERAMIC	0.01MF		50V
C209	1-101-004-00	CERAMIC	0.01MF		50V
C210	1-123-356-00	ELECT	10MF	20%	16V
C211	1-101-004-00	CERAMIC	0.01MF		50V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
C212	1-123-356-00	ELECT	10MF	20%	16V
C213	1-161-025-00	CERAMIC	0.1MF	10%	25V
C214	1-123-332-00	ELECT	47MF	20%	16V
C215	1-123-333-00	ELECT	100MF	20%	16V
C216	1-161-025-00	CERAMIC	0.1MF	10%	25V
C217	1-123-333-00	ELECT	100MF	20%	16V
C218	1-102-936-00	CERAMIC	3PF	0.25PF	50V
C601	1-101-004-00	CERAMIC	0.01MF		50V
C602	1-101-004-00	CERAMIC	0.01MF		50V
C603	1-101-004-00	CERAMIC	0.01MF		50V
C604	1-101-004-00	CERAMIC	0.01MF		50V
C605	1-123-356-00	ELECT	10MF	20%	16V
C606	1-101-004-00	CERAMIC	0.01MF		50V
C607	1-123-356-00	ELECT	10MF	20%	16V
C608	1-123-333-00	ELECT	100MF	20%	16V
C609	1-101-004-00	CERAMIC	0.01MF		50V
C610	1-123-356-00	ELECT	10MF	20%	16V
C611	1-123-332-00	ELECT	47MF	20%	16V
C616	1-123-356-00	ELECT	10MF	20%	16V
C617	1-123-323-00	ELECT	470MF	20%	16V
C618	1-123-356-00	ELECT	10MF	20%	16V
C619	1-123-356-00	ELECT	10MF	20%	16V
C620	1-123-356-00	ELECT	10MF	20%	16V
C621	1-123-333-00	ELECT	100MF	20%	16V
C622	1-102-127-21	CERAMIC	0.0068MF	10%	50V
C623	1-102-127-21	CERAMIC	0.0068MF	10%	50V
C624	1-123-356-00	ELECT	10MF	20%	16V
C625	1-101-004-00	CERAMIC	0.01MF		50V
C626	1-101-004-00	CERAMIC	0.01MF		50V
C629	1-130-495-00	MYLAR	0.1MF	5%	50V
C650	1-101-004-00	CERAMIC	0.01MF		50V
C651	1-101-004-00	CERAMIC	0.01MF		50V
C652	1-102-074-00	CERAMIC	0.001MF	10%	50V
C653	1-101-004-00	CERAMIC	0.01MF		50V
C654	1-101-004-00	CERAMIC	0.01MF		50V
C655	1-102-074-00	CERAMIC	0.001MF	10%	50V

CONNECTOR

Ref.No	Part No.	Description	Remark
CN001	*1-564-031-00	PIN, CONNECTOR 6P	
CN002	*1-564-030-00	PIN, CONNECTOR 5P	
CN003	*1-560-893-00	PIN, CONNECTOR 5P	
CN004	*1-560-891-00	PIN, CONNECTOR 3P	
CN005	*1-560-898-00	PIN, CONNECTOR 10P	
CN006	*1-560-895-00	PIN, CONNECTOR 7P	
CN007	*1-560-891-00	PIN, CONNECTOR 3P	
CN008	*1-560-893-00	PIN, CONNECTOR 5P	
CN009	*1-560-896-00	PIN, CONNECTOR 8P	
CN010	*1-560-894-00	PIN, CONNECTOR 6P	
CN011	*1-560-893-00	PIN, CONNECTOR 5P	
CN012	*1-560-896-00	PIN, CONNECTOR 8P	
CN013	*1-560-894-00	PIN, CONNECTOR 6P	
CN014	*1-560-897-00	PIN, CONNECTOR 9P	
CN015	*1-564-028-00	PIN, CONNECTOR 3P	
CN016	*1-560-890-00	PIN, CONNECTOR 2P	

DIODE

Ref.No	Part No.	Description	Remark
D001	8-719-911-19	DIODE 1SS119	
D002	8-719-911-19	DIODE 1SS119	
D003	8-719-911-19	DIODE 1SS119	
D004	8-719-911-19	DIODE 1SS119	
D005	8-719-911-19	DIODE 1SS119	
D006	8-719-911-19	DIODE 1SS119	
D007	8-719-911-19	DIODE 1SS119	
D008	8-719-000-04	DIODE MC911	
D010	8-719-000-12	DIODE MC931	
D013	8-719-911-19	DIODE 1SS119	
D014	8-719-911-19	DIODE 1SS119	
D015	8-719-000-06	DIODE MC921	
D016	8-719-911-19	DIODE 1SS119	
D017	8-719-911-19	DIODE 1SS119	
D018	8-719-911-19	DIODE 1SS119	
D019	8-719-911-19	DIODE 1SS119	
D020	8-719-000-12	DIODE MC931	
D022	8-719-101-61	DIODE RD6.2EL2	
D023	8-719-911-19	DIODE 1SS119	
D024	8-719-000-06	DIODE MC921	
D025	8-719-000-06	DIODE MC921	
D026	8-719-000-12	DIODE MC931	
D027	8-719-911-19	DIODE 1SS119	
D029	8-719-102-73	DIODE RD6.2EN1	
D601	8-719-911-19	DIODE 1SS119	
D602	8-719-911-19	DIODE 1SS119	
D603	8-719-911-19	DIODE 1SS119	
D604	8-719-911-19	DIODE 1SS119	
D605	8-719-911-19	DIODE 1SS119	
D606	8-719-911-19	DIODE 1SS119	
D607	8-719-911-19	DIODE 1SS119	
D608	8-719-911-19	DIODE 1SS119	
D609	8-719-101-86	DIODE RD13EL2	
D610	8-719-911-19	DIODE 1SS119	
D611	8-719-000-06	DIODE MC921	

IC

Ref.No	Part No.	Description	Remark
IC001	8-752-010-40	IC CX20104	
IC002	8-752-010-50	IC CX20105	
IC003	8-752-009-71	IC CX20097A	
IC004	8-752-010-50	IC CX20105	
IC007	8-759-240-66	IC TC4066BP	
IC009	8-759-700-62	IC NJM4562D	
IC010	8-759-240-66	IC TC4066BP	
IC011	8-759-922-43	IC TK15052D	
IC012	8-759-915-48	IC TK15011Z	
IC013	8-759-145-58	IC UPC4558C	

COIL

Ref.No	Part No.	Description	Remark
L001	1-408-421-00	MICRO INDUCTOR 100UH	

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description	Remark
L002	1-408-405-00	MICRO INDUCTOR 4.7UH	
L003	1-408-421-00	MICRO INDUCTOR 100UH	
L004	1-408-405-00	MICRO INDUCTOR 4.7UH	
L005	1-408-421-00	MICRO INDUCTOR 100UH	
L006	1-408-418-00	MICRO INDUCTOR 56UH	
L007	1-408-609-41	MICRO INDUCTOR 33UH	
L008	1-408-416-00	MICRO INDUCTOR 39UH	
L009	1-408-413-00	MICRO INDUCTOR 22UH	
		L.P.F	
LPF001	1-235-365-11	L.P.F	
LPF002	1-235-365-11	L.P.F	
		IC LINK	
PS001 ⚠	1-532-605-11	LINK, IC	
		TRANSISTOR	
Q001	8-729-900-89	TRANSISTOR DTC144ES	
Q002	8-729-204-83	TRANSISTOR 2SA1048	
Q003	8-729-800-42	TRANSISTOR 2SK152	
Q004	8-729-204-83	TRANSISTOR 2SA1048	
Q005	8-729-245-83	TRANSISTOR 2SC2458	
Q006	8-729-900-89	TRANSISTOR DTC144ES	
Q007	8-729-900-89	TRANSISTOR DTC144ES	
Q008	8-729-800-42	TRANSISTOR 2SK152	
Q009	8-729-204-83	TRANSISTOR 2SA1048	
Q010	8-729-245-83	TRANSISTOR 2SC2458	
Q011	8-729-900-89	TRANSISTOR DTC144ES	
Q012	8-729-900-89	TRANSISTOR DTC144ES	
Q013	8-729-113-33	TRANSISTOR 2SB733	
Q014	8-729-117-54	TRANSISTOR 2SA1175	
Q015	8-729-603-30	TRANSISTOR 2SC403SP	
Q016	8-729-603-30	TRANSISTOR 2SC403SP	
Q017	8-729-603-30	TRANSISTOR 2SC403SP	
Q018	8-729-204-83	TRANSISTOR 2SA1048	
Q019	8-729-900-89	TRANSISTOR DTC144ES	
Q020	8-729-204-83	TRANSISTOR 2SA1048	
Q021	8-729-900-89	TRANSISTOR DTC144ES	
Q022	8-729-178-54	TRANSISTOR 2SC2785	
Q023	8-729-245-83	TRANSISTOR 2SC2458	
Q024	8-729-245-83	TRANSISTOR 2SC2458	
Q025	8-729-245-83	TRANSISTOR 2SC2458	
Q026	8-729-900-89	TRANSISTOR DTC144ES	
Q027	8-729-245-83	TRANSISTOR 2SC2458	
Q028	8-729-900-89	TRANSISTOR DTC144ES	
Q029	8-729-900-89	TRANSISTOR DTC144ES	
Q030	8-729-245-83	TRANSISTOR 2SC2458	
Q031	8-729-245-83	TRANSISTOR 2SC2458	
Q032	8-729-245-83	TRANSISTOR 2SC2458	
Q033	8-729-245-83	TRANSISTOR 2SC2458	
Q034	8-729-900-80	TRANSISTOR DTC114ES	
Q035	8-729-900-80	TRANSISTOR DTC114ES	
Q036	8-729-900-80	TRANSISTOR DTC114ES	
Q037	8-729-900-80	TRANSISTOR DTC114ES	
Q038	8-729-900-80	TRANSISTOR DTC114ES	
Q039	8-729-900-80	TRANSISTOR DTC114ES	
Q040	8-729-900-89	TRANSISTOR DTC144ES	
Q041	8-729-204-83	TRANSISTOR 2SA1048	
Q042	8-729-204-83	TRANSISTOR 2SA1048	
Q043	8-729-900-89	TRANSISTOR DTC144ES	
Q044	8-729-177-43	TRANSISTOR 2SD774	
Q048	8-729-900-89	TRANSISTOR DTC144ES	
Q050	8-729-900-89	TRANSISTOR DTC144ES	
Q501	8-729-245-83	TRANSISTOR 2SC2458	
Q502	8-729-245-83	TRANSISTOR 2SC2458	
Q503	8-729-245-83	TRANSISTOR 2SC2458	
Q601	8-729-245-83	TRANSISTOR 2SC2458	
Q602	8-729-245-83	TRANSISTOR 2SC2458	
Q603	8-729-245-83	TRANSISTOR 2SC2458	
Q604	8-729-245-83	TRANSISTOR 2SC2458	
Q605	8-729-900-89	TRANSISTOR DTC144ES	
Q607	8-729-900-89	TRANSISTOR DTC144ES	
Q608	8-729-245-83	TRANSISTOR 2SC2458	
Q609	8-729-245-83	TRANSISTOR 2SC2458	
Q610	8-729-900-89	TRANSISTOR DTC144ES	
Q611	8-729-178-54	TRANSISTOR 2SC2785	
Q612	8-729-245-83	TRANSISTOR 2SC2458	
Q613	8-729-245-83	TRANSISTOR 2SC2458	
Q614	8-729-245-83	TRANSISTOR 2SC2458	
Q615	8-729-245-83	TRANSISTOR 2SC2458	
Q616	8-729-245-83	TRANSISTOR 2SC2458	
Q619 ⚠	8-729-113-33	TRANSISTOR 2SB733	
Q621 ⚠	8-729-113-33	TRANSISTOR 2SB733	
Q623	8-729-900-89	TRANSISTOR DTC144ES	
Q624	8-729-900-89	TRANSISTOR DTC144ES	
Q625	8-729-245-83	TRANSISTOR 2SC2458	
Q626	8-729-245-83	TRANSISTOR 2SC2458	
Q627	8-729-245-83	TRANSISTOR 2SC2458	
Q628	8-729-900-89	TRANSISTOR DTC144ES	
Q629	8-729-245-83	TRANSISTOR 2SC2458	
Q650	8-729-245-83	TRANSISTOR 2SC2458	
Q651	8-729-245-83	TRANSISTOR 2SC2458	
		RESISTOR	
R001	1-247-849-00	CARBON 5.6K 5% 1/6W	
R002	1-247-831-00	CARBON 1K 5% 1/6W	
R003	1-247-832-00	CARBON 470 5% 1/6W	
R004	1-247-827-00	CARBON 680 5% 1/6W	
R005	1-247-827-00	CARBON 680 5% 1/6W	
R006	1-247-843-00	CARBON 3.3K 5% 1/6W	
R007	1-249-421-11	CARBON 2.2K 5% 1/6W	
R008	1-247-831-00	CARBON 1K 5% 1/6W	
R009	1-247-831-00	CARBON 1K 5% 1/6W	
R010	1-247-831-00	CARBON 1K 5% 1/6W	
R011	1-247-831-00	CARBON 1K 5% 1/6W	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description				Remark
R012	1-247-807-00	CARBON	100	5%	1/6W	
R013	1-247-849-00	CARBON	5.6K	5%	1/6W	
R014	1-247-831-00	CARBON	1K	5%	1/6W	
R015	1-247-831-00	CARBON	1K	5%	1/6W	
R016	1-247-827-00	CARBON	680	5%	1/6W	
R017	1-247-827-00	CARBON	680	5%	1/6W	
R018	1-247-843-00	CARBON	3.3K	5%	1/6W	
R019	1-249-421-11	CARBON	2.2K	5%	1/6W	
R020	1-247-831-00	CARBON	1K	5%	1/6W	
R021	1-247-831-00	CARBON	1K	5%	1/6W	
R022	1-247-831-00	CARBON	1K	5%	1/6W	
R023	1-247-831-00	CARBON	1K	5%	1/6W	
R024	1-247-847-00	CARBON	4.7K	5%	1/6W	
R025	1-247-847-00	CARBON	4.7K	5%	1/6W	
R026	1-247-857-00	CARBON	12K	5%	1/6W	
R027	1-247-869-00	CARBON	39K	5%	1/6W	
R028 ⚠	1-213-128-61	METAL OXIDE	56	5%	1W	F
R029	1-247-826-00	CARBON	620	5%	1/6W	
R030	1-214-673-00	METAL	4.7	1%	1/4W	
R031	1-247-823-00	CARBON	470	5%	1/6W	
R032	1-247-820-00	CARBON	360	5%	1/6W	
R033	1-247-799-00	CARBON	47	5%	1/6W	
R034	1-247-831-00	CARBON	1K	5%	1/6W	
R035	1-247-819-00	CARBON	330	5%	1/6W	
R036	1-249-429-11	CARBON	10K	5%	1/6W	
R037	1-247-853-00	CARBON	8.2K	5%	1/6W	
R038	1-215-436-00	METAL	4.3K	1%	1/6W	
R039	1-215-423-00	METAL	1.2K	1%	1/6W	
R040	1-247-847-00	CARBON	4.7K	5%	1/6W	
R041	1-247-847-00	CARBON	4.7K	5%	1/6W	
R042	1-247-861-00	CARBON	18K	5%	1/6W	
R043	1-247-861-00	CARBON	18K	5%	1/6W	
R044	1-247-861-00	CARBON	18K	5%	1/6W	
R045	1-247-861-00	CARBON	18K	5%	1/6W	
R046 ⚠	1-212-853-51	FUSIBLE	6.8	5%	1/4W	F
R047	1-247-823-00	CARBON	470	5%	1/6W	
R048	1-247-823-00	CARBON	470	5%	1/6W	
R049	1-247-851-00	CARBON	6.8K	5%	1/6W	
R050	1-247-837-00	CARBON	1.8K	5%	1/6W	
R051	1-247-821-00	CARBON	390	5%	1/6W	
R052	1-247-859-00	CARBON	15K	5%	1/6W	
R053	1-247-857-00	CARBON	12K	5%	1/6W	
R054	1-247-863-00	CARBON	22K	5%	1/6W	
R055	1-247-852-00	CARBON	7.5K	5%	1/6W	
R056	1-247-848-00	CARBON	5.1K	5%	1/6W	
R057	1-249-421-11	CARBON	2.2K	5%	1/6W	
R058	1-247-861-00	CARBON	18K	5%	1/6W	
R059	1-249-421-11	CARBON	2.2K	5%	1/6W	
R060	1-249-421-11	CARBON	2.2K	5%	1/6W	
R061	1-247-861-00	CARBON	18K	5%	1/6W	
R062	1-247-898-00	CARBON	620K	5%	1/6W	
R063	1-247-843-00	CARBON	3.3K	5%	1/6W	
R064	1-247-843-00	CARBON	3.3K	5%	1/6W	

Ref.No	Part No.	Description				Remark
R065	1-247-843-00	CARBON	3.3K	5%	1/6W	
R066	1-247-807-00	CARBON	100	5%	1/6W	
R067	1-215-433-00	METAL	3.3K	1%	1/6W	
R068	1-247-859-00	CARBON	15K	5%	1/6W	
R069	1-247-824-00	CARBON	510	5%	1/6W	
R070	1-249-429-11	CARBON	10K	5%	1/6W	
R071	1-247-840-00	CARBON	2.4K	5%	1/6W	
R072	1-249-429-11	CARBON	10K	5%	1/6W	
R073	1-249-429-11	CARBON	10K	5%	1/6W	
R074	1-247-843-00	CARBON	3.3K	5%	1/6W	
R075	1-247-814-00	CARBON	200	5%	1/6W	
R076	1-247-834-00	CARBON	1.3K	5%	1/6W	
R077	1-247-858-00	CARBON	13K	5%	1/6W	
R078	1-247-838-00	CARBON	2K	5%	1/6W	
R079	1-247-858-00	CARBON	13K	5%	1/6W	
R080	1-249-429-11	CARBON	10K	5%	1/6W	
R081	1-247-833-00	CARBON	1.2K	5%	1/6W	
R082	1-247-895-00	CARBON	470K	5%	1/6W	
R083	1-247-834-00	CARBON	1.3K	5%	1/6W	
R084	1-247-853-00	CARBON	8.2K	5%	1/6W	
R085	1-249-434-11	CARBON	27K	5%	1/6W	
R086	1-247-825-00	CARBON	560	5%	1/6W	
R087	1-247-824-00	CARBON	510	5%	1/6W	
R102	1-247-831-00	CARBON	1K	5%	1/6W	
R109	1-247-847-00	CARBON	4.7K	5%	1/6W	
R110	1-247-847-00	CARBON	4.7K	5%	1/6W	
R114	1-247-831-00	CARBON	1K	5%	1/6W	
R115	1-249-437-11	CARBON	47K	5%	1/6W	
R116	1-249-437-11	CARBON	47K	5%	1/6W	
R117	1-247-879-00	CARBON	100K	5%	1/6W	
R118	1-247-881-00	CARBON	120K	5%	1/6W	
R119	1-247-847-00	CARBON	4.7K	5%	1/6W	
R120	1-247-847-00	CARBON	4.7K	5%	1/6W	
R121	1-249-437-11	CARBON	47K	5%	1/6W	
R122	1-249-437-11	CARBON	47K	5%	1/6W	
R123	1-249-437-11	CARBON	47K	5%	1/6W	
R124	1-249-421-11	CARBON	2.2K	5%	1/6W	
R125	1-249-419-11	CARBON	1.5K	5%	1/6W	
R126	1-247-869-00	CARBON	39K	5%	1/6W	
R127	1-249-429-11	CARBON	10K	5%	1/6W	
R128	1-247-813-00	CARBON	180	5%	1/6W	
R129	1-247-863-00	CARBON	22K	5%	1/6W	
R130	1-249-429-11	CARBON	10K	5%	1/6W	
R131	1-247-817-00	CARBON	270	5%	1/6W	
R132	1-247-873-00	CARBON	56K	5%	1/6W	
R133	1-247-867-00	CARBON	33K	5%	1/6W	
R134	1-247-849-00	CARBON	5.6K	5%	1/6W	
R135	1-247-847-00	CARBON	4.7K	5%	1/6W	
R136	1-247-847-00	CARBON	4.7K	5%	1/6W	
R137	1-247-849-00	CARBON	5.6K	5%	1/6W	
R138	1-249-429-11	CARBON	10K	5%	1/6W	
R139	1-249-429-11	CARBON	10K	5%	1/6W	
R140	1-247-807-00	CARBON	100	5%	1/6W	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description				Remark
R141	1-247-807-00	CARBON	100	5%	1/6W	
R142	1-249-421-11	CARBON	2.2K	5%	1/6W	
R143	1-249-421-11	CARBON	2.2K	5%	1/6W	
R144	1-249-429-11	CARBON	10K	5%	1/6W	
R145	1-249-429-11	CARBON	10K	5%	1/6W	
R146	1-249-429-11	CARBON	10K	5%	1/6W	
R147	1-249-421-11	CARBON	2.2K	5%	1/6W	
R148	1-249-437-11	CARBON	47K	5%	1/6W	
R152	1-215-462-00	METAL	51K	1%	1/6W	
R153	1-247-815-00	CARBON	220	5%	1/6W	
R154	1-215-465-00	METAL	68K	1%	1/6W	
R155	1-215-446-00	METAL	11K	1%	1/6W	
R156	1-215-465-00	METAL	68K	1%	1/6W	
R157	1-215-446-00	METAL	11K	1%	1/6W	
R158	1-215-462-00	METAL	51K	1%	1/6W	
R159	1-249-437-11	CARBON	47K	5%	1/6W	
R160	1-249-429-11	CARBON	10K	5%	1/6W	
R161	1-249-437-11	CARBON	47K	5%	1/6W	
R162	1-247-815-00	CARBON	220	5%	1/6W	
R163	1-249-429-11	CARBON	10K	5%	1/6W	
R164	1-249-429-11	CARBON	10K	5%	1/6W	
R165	1-215-429-00	METAL	2.2K	1%	1/6W	
R166	1-215-429-00	METAL	2.2K	1%	1/6W	
R167	1-249-429-11	CARBON	10K	5%	1/6W	
R168	1-249-429-11	CARBON	10K	5%	1/6W	
R169	1-247-843-00	CARBON	3.3K	5%	1/6W	
R170	1-247-849-00	CARBON	5.6K	5%	1/6W	
R171	1-247-851-00	CARBON	6.8K	5%	1/6W	
R172	1-247-841-00	CARBON	2.7K	5%	1/6W	
R175	1-247-824-00	CARBON	510	5%	1/6W	
R176	1-247-836-00	CARBON	1.6K	5%	1/6W	
R177	1-247-825-00	CARBON	560	5%	1/6W	
R178	1-249-434-11	CARBON	27K	5%	1/6W	
R179	1-247-853-00	CARBON	8.2K	5%	1/6W	
R180	1-247-834-00	CARBON	1.3K	5%	1/6W	
R181	1-247-838-00	CARBON	2K	5%	1/6W	
R182	1-247-858-00	CARBON	13K	5%	1/6W	
R183	1-247-895-00	CARBON	470K	5%	1/6W	
R184	1-247-858-00	CARBON	13K	5%	1/6W	
R185	1-249-429-11	CARBON	10K	5%	1/6W	
R186	1-247-833-00	CARBON	1.2K	5%	1/6W	
R187	1-247-843-00	CARBON	3.3K	5%	1/6W	
R188	1-247-834-00	CARBON	1.3K	5%	1/6W	
R189	1-247-814-00	CARBON	200	5%	1/6W	
R190	1-249-429-11	CARBON	10K	5%	1/6W	
R191	1-249-429-11	CARBON	10K	5%	1/6W	
R192	1-247-840-00	CARBON	2.4K	5%	1/6W	
R193	1-249-429-11	CARBON	10K	5%	1/6W	
R194	1-247-824-00	CARBON	510	5%	1/6W	
R195	1-247-859-00	CARBON	15K	5%	1/6W	
R196	1-247-807-00	CARBON	100	5%	1/6W	
R197	1-215-433-00	METAL	3.3K	1%	1/6W	
R198	1-247-848-00	CARBON	5.1K	5%	1/6W	

Ref.No	Part No.	Description				Remark
R199	1-249-429-11	CARBON	10K	5%	1/6W	
R200	1-247-861-00	CARBON	18K	5%	1/6W	
R201	1-249-421-11	CARBON	2.2K	5%	1/6W	
R202	1-247-861-00	CARBON	18K	5%	1/6W	
R203	1-249-421-11	CARBON	2.2K	5%	1/6W	
R206	1-247-843-00	CARBON	3.3K	5%	1/6W	
R207	1-247-843-00	CARBON	3.3K	5%	1/6W	
R208	1-247-843-00	CARBON	3.3K	5%	1/6W	
R209	1-247-883-00	CARBON	150K	5%	1/6W	
R210	1-247-864-00	CARBON	24K	5%	1/6W	
R211	1-247-898-00	CARBON	620K	5%	1/6W	
R212	1-247-847-00	CARBON	4.7K	5%	1/6W	
R213	1-247-843-00	CARBON	3.3K	5%	1/6W	
R214	1-247-841-00	CARBON	2.7K	5%	1/6W	
R215	1-249-419-11	CARBON	1.5K	5%	1/6W	
R216	1-247-857-00	CARBON	12K	5%	1/6W	
R217	1-247-864-00	CARBON	24K	5%	1/6W	
R218	1-247-861-00	CARBON	18K	5%	1/6W	
R219	1-249-437-11	CARBON	47K	5%	1/6W	
R220	1-247-821-00	CARBON	390	5%	1/6W	
R221	1-247-859-00	CARBON	15K	5%	1/6W	
R222	1-247-837-00	CARBON	1.8K	5%	1/6W	
R223	1-247-851-00	CARBON	6.8K	5%	1/6W	
R225	1-247-847-00	CARBON	4.7K	5%	1/6W	
R226	1-247-847-00	CARBON	4.7K	5%	1/6W	
R227 ⚠	1-212-853-51	FUSIBLE	6.8	5%	1/4W	F
R228	1-247-829-00	CARBON	820	5%	1/6W	
R229	1-247-819-00	CARBON	330	5%	1/6W	
R230	1-247-827-00	CARBON	680	5%	1/6W	
R231	1-247-847-00	CARBON	4.7K	5%	1/6W	
R232	1-247-849-00	CARBON	5.6K	5%	1/6W	
R233	1-247-823-00	CARBON	470	5%	1/6W	
R239	1-247-847-00	CARBON	4.7K	5%	1/6W	
R241	1-247-879-00	CARBON	100K	5%	1/6W	
R244	1-247-875-00	CARBON	68K	5%	1/6W	
R501	1-249-437-11	CARBON	47K	5%	1/6W	
R502	1-249-437-11	CARBON	47K	5%	1/6W	
R503	1-249-437-11	CARBON	47K	5%	1/6W	
R601	1-247-849-00	CARBON	5.6K	5%	1/6W	
R602	1-247-837-00	CARBON	1.8K	5%	1/6W	
R603	1-247-850-00	CARBON	6.2K	5%	1/6W	
R604	1-249-434-11	CARBON	27K	5%	1/6W	
R605	1-247-851-00	CARBON	6.8K	5%	1/6W	
R606	1-247-819-00	CARBON	330	5%	1/6W	
R607	1-247-851-00	CARBON	6.8K	5%	1/6W	
R608	1-247-851-00	CARBON	6.8K	5%	1/6W	
R610	1-247-846-00	CARBON	4.3K	5%	1/6W	
R611	1-249-429-11	CARBON	10K	5%	1/6W	
R612	1-247-831-00	CARBON	1K	5%	1/6W	
R613	1-247-857-00	CARBON	12K	5%	1/6W	
R614	1-247-857-00	CARBON	12K	5%	1/6W	
R615	1-247-825-00	CARBON	560	5%	1/6W	
R616	1-247-847-00	CARBON	4.7K	5%	1/6W	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R617	1-247-831-00	CARBON	1K	5%	1/6W	
R618	1-249-429-11	CARBON	10K	5%	1/6W	
R619	1-249-429-11	CARBON	10K	5%	1/6W	
R620	1-247-831-00	CARBON	1K	5%	1/6W	
R625	1-247-847-00	CARBON	4.7K	5%	1/6W	
R626	1-247-831-00	CARBON	1K	5%	1/6W	
R627	1-249-421-11	CARBON	2.2K	5%	1/6W	
R628	1-247-831-00	CARBON	1K	5%	1/6W	
R632	1-247-847-00	CARBON	4.7K	5%	1/6W	
R633	1-247-847-00	CARBON	4.7K	5%	1/6W	
R634	1-247-825-00	CARBON	560	5%	1/6W	
R635	1-247-847-00	CARBON	4.7K	5%	1/6W	
R636	1-247-847-00	CARBON	4.7K	5%	1/6W	
R638	1-247-847-00	CARBON	4.7K	5%	1/6W	
R639 ⚠	1-247-827-91	CARBON	680	5%	1/6W	
R640	1-247-847-00	CARBON	4.7K	5%	1/6W	
R641 ⚠	1-247-827-91	CARBON	680	5%	1/6W	
R642 ⚠	1-212-849-51	FUSIBLE	4.7	5%	1/4W	F
R643	1-247-851-00	CARBON	6.8K	5%	1/6W	
R644	1-247-847-00	CARBON	4.7K	5%	1/6W	
R650	1-247-843-00	CARBON	3.3K	5%	1/6W	
R651	1-247-879-00	CARBON	100K	5%	1/6W	
R652	1-247-859-00	CARBON	15K	5%	1/6W	
R653	1-247-851-00	CARBON	6.8K	5%	1/6W	
R654	1-247-831-00	CARBON	1K	5%	1/6W	
R655	1-247-843-00	CARBON	3.3K	5%	1/6W	
R656	1-247-879-00	CARBON	100K	5%	1/6W	
R657	1-247-859-00	CARBON	15K	5%	1/6W	
R658	1-247-851-00	CARBON	6.8K	5%	1/6W	
R659	1-247-831-00	CARBON	1K	5%	1/6W	
R660	1-247-831-00	CARBON	1K	5%	1/6W	
R661	1-247-831-00	CARBON	1K	5%	1/6W	
R662	1-247-847-00	CARBON	4.7K	5%	1/6W	
R663	1-247-887-00	CARBON	220K	5%	1/6W	
R664	1-247-887-00	CARBON	220K	5%	1/6W	
R665	1-249-437-11	CARBON	47K	5%	1/6W	
R666	1-247-895-00	CARBON	470K	5%	1/6W	
R667	1-247-863-00	CARBON	22K	5%	1/6W	
R668	1-249-437-11	CARBON	47K	5%	1/6W	
R669	1-247-895-00	CARBON	470K	5%	1/6W	
R670	1-247-863-00	CARBON	22K	5%	1/6W	
R671	1-249-429-11	CARBON	10K	5%	1/6W	
R672	1-215-415-00	METAL	560	1%	1/6W	
R675	1-247-843-00	CARBON	3.3K	5%	1/6W	
R676	1-249-421-11	CARBON	2.2K	5%	1/6W	
R677	1-247-849-00	CARBON	5.6K	5%	1/6W	
R678	1-247-879-00	CARBON	100K	5%	1/6W	
R679	1-247-879-00	CARBON	100K	5%	1/6W	
R680	1-249-437-11	CARBON	47K	5%	1/6W	
R681	1-249-437-11	CARBON	47K	5%	1/6W	
R682	1-247-879-00	CARBON	100K	5%	1/6W	
R683	1-247-847-00	CARBON	4.7K	5%	1/6W	
R684	1-249-437-11	CARBON	47K	5%	1/6W	
R685	1-249-437-11	CARBON	47K	5%	1/6W	
R686	1-249-437-11	CARBON	47K	5%	1/6W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV001	1-228-991-00	RES, ADJ, CARBON 2.2K	
RV002	1-228-994-00	RES, ADJ, CARBON 10K	
RV003	1-228-993-00	RES, ADJ, CARBON 4.7K	
RV005	1-228-993-00	RES, ADJ, CARBON 4.7K	
RV006	1-228-993-00	RES, ADJ, CARBON 4.7K	
RV007	1-228-993-00	RES, ADJ, CARBON 4.7K	
RV008	1-228-990-00	RES, ADJ, CARBON 1K	
RV009	1-228-921-00	RES, ADJ, CARBON 4.7K	
RV010	1-228-994-00	RES, ADJ, CARBON 10K	
RV011	1-228-991-00	RES, ADJ, CARBON 2.2K	
RV012	1-228-990-00	RES, ADJ, CARBON 1K	
RV013	1-228-993-00	RES, ADJ, CARBON 4.7K	
RV014	1-228-993-00	RES, ADJ, CARBON 4.7K	
RV601	1-230-496-11	RES, ADJ, METAL GLAZE 10K	
RV602	1-228-921-00	RES, ADJ, CARBON 4.7K	
RV603	1-228-921-00	RES, ADJ, CARBON 4.7K	
RV604	1-228-995-00	RES, ADJ, METAL GLAZE 22K	
RV605	1-228-995-00	RES, ADJ, METAL GLAZE 22K	

TRANSFORMER

Ref.No	Part No.	Description	Remark
T001	1-427-546-11	TRANSFORMER, I/O	
T002	1-427-546-11	TRANSFORMER, I/O	

THERMISTOR

Ref.No	Part No.	Description	Remark
TH001	1-800-202-XX	THERMISTOR S-10K	
TH002	1-800-198-XX	THERMISTOR S-1K	

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*A-6715-272-A SS-50 BOARD, COMPLETE
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*3-681-170-00 HEAT SINK, S
7-621-770-87 SCREW +B 2.6X5

CAPACITOR

Ref.No	Part No.	Description				Remark
C101	1-161-023-00	CERAMIC	0.068MF	10%	25V	
C102	1-102-816-00	CERAMIC	120PF	10%	50V	
C103	1-102-513-00	CERAMIC	18PF	5%	50V	
C104	1-102-513-00	CERAMIC	18PF	5%	50V	
C105	1-161-023-00	CERAMIC	0.068MF	10%	25V	
C106	1-102-529-00	CERAMIC	100PF	5%	50V	
C107	1-102-529-00	CERAMIC	100PF	5%	50V	
C108	1-161-023-00	CERAMIC	0.068MF	10%	25V	
C109	1-161-023-00	CERAMIC	0.068MF	10%	25V	
C110	1-161-025-00	CERAMIC	0.1MF	10%	25V	
C111	1-161-025-00	CERAMIC	0.1MF	10%	25V	
C112	1-130-499-00	MYLAR	0.22MF	5%	50V	
C113	1-123-380-00	ELECT	1MF	20%	50V	
C114	1-123-343-00	ELECT	33MF	20%	25V	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description			Remark
C115	1-102-518-00	CERAMIC	33PF	5%	50V
C116	1-102-518-00	CERAMIC	33PF	5%	50V
C119	1-161-059-00	CERAMIC	0.047MF	10%	25V
C120	1-161-059-00	CERAMIC	0.047MF	10%	25V
C121	1-161-013-00	CERAMIC	0.01MF	10%	25V
C122	1-123-318-00	ELECT	33MF	20%	16V
C301	1-131-344-00	TANTALUM	0.33MF	10%	35V
C302	1-130-491-00	MYLAR	0.047MF	5%	50V
C303	1-130-491-00	MYLAR	0.047MF	5%	50V
C304	1-161-059-00	CERAMIC	0.047MF	10%	25V
C305	1-123-321-00	ELECT	220MF	20%	16V
C306	1-130-491-00	MYLAR	0.047MF	5%	50V
C307	1-130-491-00	MYLAR	0.047MF	5%	50V
C308	1-161-013-00	CERAMIC	0.01MF	10%	25V
C309	1-161-013-00	CERAMIC	0.01MF	10%	25V
C310	1-123-356-00	ELECT	10MF	20%	16V
C311	1-130-483-00	MYLAR	0.01MF	5%	50V
C312	1-130-491-00	MYLAR	0.047MF	5%	50V
C313	1-130-491-00	MYLAR	0.047MF	5%	50V
C314	1-130-491-00	MYLAR	0.047MF	5%	50V
C315	1-130-491-00	MYLAR	0.047MF	5%	50V
C316	1-130-491-00	MYLAR	0.047MF	5%	50V
C317	1-161-045-00	CERAMIC	0.0033MF	10%	25V
C318	1-161-039-00	CERAMIC	0.001MF	10%	25V
C320	1-123-380-00	ELECT	1MF	20%	50V
C321	1-161-039-00	CERAMIC	0.001MF	10%	25V
C323	1-123-332-00	ELECT	47MF	20%	16V
C324	1-161-059-00	CERAMIC	0.047MF	10%	25V
C325	1-123-356-00	ELECT	10MF	20%	16V
C328	1-123-381-00	ELECT	2.2MF	20%	50V
C329	1-123-381-00	ELECT	2.2MF	20%	50V
C330	1-123-381-00	ELECT	2.2MF	20%	50V
C332	1-123-356-00	ELECT	10MF	20%	16V
C333	1-123-356-00	ELECT	10MF	20%	16V
C334	1-123-381-00	ELECT	2.2MF	20%	50V
C335	1-161-039-00	CERAMIC	0.001MF	10%	25V
C336	1-123-332-00	ELECT	47MF	20%	16V
C337	1-161-059-00	CERAMIC	0.047MF	10%	25V
C338	1-161-045-00	CERAMIC	0.0033MF	10%	25V
C339	1-130-493-00	MYLAR	0.068MF	5%	50V
C340	1-123-332-00	ELECT	47MF	20%	16V
C341	1-102-973-00	CERAMIC	100PF	5%	50V
C342	1-123-369-00	ELECT	4.7MF	20%	25V
C343	1-123-381-00	ELECT	2.2MF	20%	50V
C344	1-123-379-00	ELECT	0.47MF	20%	50V
C345	1-130-483-00	MYLAR	0.01MF	5%	50V
C346	1-123-369-00	ELECT	4.7MF	20%	25V
C347	1-123-369-00	ELECT	4.7MF	20%	25V
C349	1-161-059-00	CERAMIC	0.047MF	10%	25V
C350	1-123-333-00	ELECT	100MF	20%	16V
C351	1-130-491-00	MYLAR	0.047MF	5%	50V
C352	1-130-483-00	MYLAR	0.01MF	5%	50V
C353	1-123-321-00	ELECT	220MF	20%	16V

Ref.No	Part No.	Description			Remark
C354	1-161-053-00	CERAMIC	0.015MF	10%	25V
C355	1-161-043-00	CERAMIC	0.0022MF	10%	25V
C356	1-161-059-00	CERAMIC	0.047MF	10%	25V
C357	1-161-025-00	CERAMIC	0.1MF	10%	25V
C358	1-161-059-00	CERAMIC	0.047MF	10%	25V
C359	1-123-356-00	ELECT	10MF	20%	16V
C360	1-161-059-00	CERAMIC	0.047MF	10%	25V
C361	1-123-356-00	ELECT	10MF	20%	16V
C362	1-123-380-00	ELECT	1MF	20%	50V
C370	1-123-381-00	ELECT	2.2MF	20%	50V
C371	1-123-307-00	ELECT	100MF	20%	10V
C372	1-123-332-00	ELECT	47MF	20%	16V
C373	1-123-356-00	ELECT	10MF	20%	16V
C374	1-161-025-00	CERAMIC	0.1MF	10%	25V
C375	1-123-356-00	ELECT	10MF	20%	16V
C379	1-102-978-00	CERAMIC	220PF	5%	50V
C501	1-161-013-00	CERAMIC	0.01MF	10%	25V
C502	1-161-013-00	CERAMIC	0.01MF	10%	25V
C503	1-161-059-00	CERAMIC	0.047MF	10%	25V
C504	1-123-356-00	ELECT	10MF	20%	16V
C505	1-161-013-00	CERAMIC	0.01MF	10%	25V
C506	1-123-356-00	ELECT	10MF	20%	16V
C507	1-161-059-00	CERAMIC	0.047MF	10%	25V
C508	1-123-380-00	ELECT	1MF	20%	50V
C609	1-123-307-00	ELECT	100MF	20%	10V
C610	1-123-380-00	ELECT	1MF	20%	50V
C611	1-123-307-00	ELECT	100MF	20%	10V

CONNECTOR

Ref.No	Part No.	Description
CN101	*1-560-900-00	PIN, CONNECTOR 12P
CN102	*1-560-900-00	PIN, CONNECTOR 12P
CN103	*1-560-893-00	PIN, CONNECTOR 5P
CN104	*1-560-898-00	PIN, CONNECTOR 10P
CN105	*1-564-011-11	PIN, CONNECTOR 12P
CN106	*1-560-891-00	PIN, CONNECTOR 3P
CN107	*1-560-891-00	PIN, CONNECTOR 3P
CN108	*1-564-007-00	PIN, CONNECTOR 8P
CN109	*1-560-890-00	PIN, CONNECTOR 2P
CN110	1-562-732-11	SOCKET 5P
CN111	*1-560-896-00	PIN, CONNECTOR 8P
CN112	1-507-678-21	JACK
CN113	*1-564-003-00	PIN, CONNECTOR 4P
CN114	*1-560-892-00	PIN, CONNECTOR 4P
CN301	*1-560-896-00	PIN, CONNECTOR 8P
CN302	*1-560-894-00	PIN, CONNECTOR 6P
CN303	*1-560-892-00	PIN, CONNECTOR 4P
CN304	*1-560-896-00	PIN, CONNECTOR 8P
CN305	*1-560-892-00	PIN, CONNECTOR 4P
CN306	*1-560-890-00	PIN, CONNECTOR 2P
CN307	*1-560-891-00	PIN, CONNECTOR 3P
CN308	*1-560-891-00	PIN, CONNECTOR 3P
CN309	*1-560-890-00	PIN, CONNECTOR 2P

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
		DIODE	
D101	8-719-200-02	DIODE 10E-2	
D102	8-719-000-04	DIODE MC911	
D104	8-719-100-71	DIODE RD15E-B2	
D105	8-719-100-71	DIODE RD15E-B2	
D107	8-719-000-06	DIODE MC921	
D110	8-719-911-19	DIODE 1SS119	
D111	8-719-200-23	DIODE 11E2	
D112	8-719-911-19	DIODE 1SS119	
D301	8-719-911-19	DIODE 1SS119	
D302	8-719-911-19	DIODE 1SS119	
D303	8-719-911-19	DIODE 1SS119	
D304	8-719-000-06	DIODE MC921	
D305	8-719-000-06	DIODE MC921	
D306	8-719-000-06	DIODE MC921	
D307	8-719-000-06	DIODE MC921	
D308	8-719-911-19	DIODE 1SS119	
D309	8-719-000-06	DIODE MC921	
D310	8-719-000-06	DIODE MC921	
D311	8-719-911-19	DIODE 1SS119	
D312	8-719-200-02	DIODE 10E-2	
D313	8-719-191-07	DIODE RD9.1E-B	
D314	8-719-101-34	DIODE RD3.0EL1	
D315	8-719-911-19	DIODE 1SS119	
D316	8-719-911-19	DIODE 1SS119	
D317	8-719-911-19	DIODE 1SS119	
D318	8-719-911-19	DIODE 1SS119	
D320	8-719-000-06	DIODE MC921	
D322	8-719-911-19	DIODE 1SS119	
D610	8-719-911-19	DIODE 1SS119	
		IC	
IC101	8-759-921-44	IC MB88551-173M	
IC102	8-759-602-75	IC M50761-696P	
IC103	8-759-105-55	IC UPD7508HG-537-22	
IC104	8-759-921-02	IC MB89005-104	
IC105	8-759-920-94	IC MSM6411B-19RS	
IC106	8-759-240-53	IC TC4053BP	
IC108	8-759-801-60	IC LB1640N	
IC109	8-759-801-60	IC LB1640N	
IC110	8-759-135-80	IC UPC358C	
IC301	8-752-012-40	IC CX20124	
IC302	8-752-006-90	IC CX20069	
IC304	8-759-240-51	IC TC4051BP	
IC305	8-759-100-06	IC UPC4556C	
IC306	8-759-240-13	IC TC4013BP	
IC307	8-759-135-80	IC UPC358C	
IC308	8-759-132-40	IC UPC324C	
IC309	8-759-240-66	IC TC4066BP	
IC310	8-759-240-53	IC TC4053BP	
IC501	8-759-918-61	IC MB88201-191G	
IC602	8-759-240-53	IC TC4053BP	

Ref.No	Part No.	Description	Remark
		COIL	
L101	1-408-412-00	MICRO INDUCTOR 18UH	
L501	1-408-421-00	MICRO INDUCTOR 100UH	
L502	1-408-417-00	MICRO INDUCTOR 47UH	
		IC LINK	
PS101	⚠1-532-637-11	LINK, IC	
PS301	⚠1-532-727-11	LINK, IC	
PS302	⚠1-532-727-11	LINK, IC	
PS303	⚠1-532-727-11	LINK, IC	
		TRANSISTOR	
Q101	8-729-900-89	TRANSISTOR DTC144ES	
Q102	8-729-900-65	TRANSISTOR DTA144ES	
Q103	8-729-900-89	TRANSISTOR DTC144ES	
Q104	8-729-900-89	TRANSISTOR DTC144ES	
Q105	8-729-900-89	TRANSISTOR DTC144ES	
Q106	8-729-204-83	TRANSISTOR 2SA1048	
Q109	8-729-900-89	TRANSISTOR DTC144ES	
Q111	8-729-900-89	TRANSISTOR DTC144ES	
Q112	8-729-900-89	TRANSISTOR DTC144ES	
Q113	8-729-245-83	TRANSISTOR 2SC2458	
Q114	8-729-245-83	TRANSISTOR 2SC2458	
Q115	8-729-245-83	TRANSISTOR 2SC2458	
Q116	8-729-245-83	TRANSISTOR 2SC2458	
Q117	8-729-204-83	TRANSISTOR 2SA1048	
Q118	8-729-113-32	TRANSISTOR 2SB733-3	
Q119	8-729-204-83	TRANSISTOR 2SA1048	
Q301	8-729-900-89	TRANSISTOR DTC144ES	
Q302	8-729-900-89	TRANSISTOR DTC144ES	
Q303	8-729-900-89	TRANSISTOR DTC144ES	
Q304	8-729-900-89	TRANSISTOR DTC144ES	
Q305	8-729-245-83	TRANSISTOR 2SC2458	
Q306	8-729-245-83	TRANSISTOR 2SC2458	
Q307	8-729-204-83	TRANSISTOR 2SA1048	
Q308	8-729-245-83	TRANSISTOR 2SC2458	
Q309	8-729-177-32	TRANSISTOR 2SD773-3	
Q310	8-729-900-89	TRANSISTOR DTC144ES	
Q311	8-729-900-89	TRANSISTOR DTC144ES	
Q312	8-729-245-83	TRANSISTOR 2SC2458	
Q313	8-729-204-83	TRANSISTOR 2SA1048	
Q314	8-729-900-89	TRANSISTOR DTC144ES	
Q315	8-729-831-33	TRANSISTOR 2SD313HP	
Q316	8-729-247-33	TRANSISTOR 2SA473	
Q317	8-729-900-65	TRANSISTOR DTA144ES	
Q318	8-729-900-89	TRANSISTOR DTC144ES	
Q319	8-729-900-89	TRANSISTOR DTC144ES	
Q320	8-729-245-83	TRANSISTOR 2SC2458	
Q321	8-729-245-83	TRANSISTOR 2SC2458	
Q322	8-729-245-83	TRANSISTOR 2SC2458	
Q323	8-729-900-89	TRANSISTOR DTC144ES	
Q324	8-729-245-83	TRANSISTOR 2SC2458	

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Ref.No	Part No.	Description	Remark
Q325	8-729-831-33	TRANSISTOR 2SD313HP	
Q326	8-729-900-89	TRANSISTOR DTC144ES	
Q327	8-729-900-89	TRANSISTOR DTC144ES	
Q328	8-729-245-83	TRANSISTOR 2SC2458	
Q329	8-729 204-83	TRANSISTOR 2SA1048	
Q330	8-729-245-83	TRANSISTOR 2SC2458	
Q331	8-729-900-89	TRANSISTOR DTC144ES	
Q333	8-729-204-83	TRANSISTOR 2SA1048	
Q334	8-729-245-83	TRANSISTOR 2SC2458	
Q335	8-729-900-89	TRANSISTOR DTC144ES	
Q336	8-729-245-83	TRANSISTOR 2SC2458	
Q337	8-729-900-89	TRANSISTOR DTC144ES	
Q338	8-729-177-32	TRANSISTOR 2SD773	
Q339	8-729-900-89	TRANSISTOR DTC144ES	
Q340	8-729-900-89	TRANSISTOR DTC144ES	
Q341	8-729-900-89	TRANSISTOR DTC144ES	
Q342	8-729-204-83	TRANSISTOR 2SA1048	
Q343	8-729-900-89	TRANSISTOR DTC144ES	
Q344	8-729-900-89	TRANSISTOR DTC144ES	
Q345	8-729-113-32	TRANSISTOR 2SB733-3	
Q346	8-729-204-83	TRANSISTOR 2SA1048	
Q350	8-729-900-89	TRANSISTOR DTC144ES	
Q351	8-729-900-89	TRANSISTOR DTC144ES	
Q352	8-729-900-89	TRANSISTOR DTC144ES	
Q353	8-729-900-89	TRANSISTOR DTC144ES	
Q354	8-729-900-89	TRANSISTOR DTC144ES	
Q355	8-729-900-89	TRANSISTOR DTC144ES	
Q356	8-729-204-83	TRANSISTOR 2SA1048	
Q357	8-729-204-83	TRANSISTOR 2SA1048	
Q358	8-729-245-83	TRANSISTOR 2SC2458	
Q359	8-729-245-83	TRANSISTOR 2SC2458	
Q360	8-729-900-65	TRANSISTOR DTA144ES	
Q361	8-729-900-89	TRANSISTOR DTC144ES	
Q362	8-729-900-89	TRANSISTOR DTC144ES	
Q363	8-729-245-83	TRANSISTOR 2SC2458	
Q364	8-729-900-89	TRANSISTOR DTC144ES	
Q365	8-729-900-89	TRANSISTOR DTC144ES	
Q366	8-729-178-54	TRANSISTOR 2SC2785	
Q501	8-729-245-83	TRANSISTOR 2SC2458	
Q612	8-729-900-89	TRANSISTOR DTC144ES	
Q613	8-729-900-89	TRANSISTOR DTC144ES	
Q614	8-729-900-89	TRANSISTOR DTC144ES	

RESISTOR

Ref.No	Part No.	Description				Remark
R105	1-249-429-11	CARBON	10K	5%	1/6W	
R106	1-249-429-11	CARBON	10K	5%	1/6W	
R107	1-249-429-11	CARBON	10K	5%	1/6W	
R108	1-249-429-11	CARBON	10K	5%	1/6W	
R110	1-247-843-00	CARBON	3.3K	5%	1/6W	
R111	1-247-903-00	CARBON	1M	5%	1/6W	
R113	1-247-879-00	CARBON	100K	5%	1/6W	
R114	1-247-843-00	CARBON	3.3K	5%	1/6W	
R115	1-247-843-00	CARBON	3.3K	5%	1/6W	
R116	1-247-843-00	CARBON	3.3K	5%	1/6W	
R117	1-247-843-00	CARBON	3.3K	5%	1/6W	
R119	1-249-429-11	CARBON	10K	5%	1/6W	
R120	1-249-429-11	CARBON	10K	5%	1/6W	
R121	1-249-429-11	CARBON	10K	5%	1/6W	
R122	1-249-429-11	CARBON	10K	5%	1/6W	
R123	1-249-429-11	CARBON	10K	5%	1/6W	
R127	1-247-887-00	CARBON	220K	5%	1/6W	
R128	1-247-901-00	CARBON	820K	5%	1/6W	
R129	1-249-429-11	CARBON	10K	5%	1/6W	
R130	1-247-821-00	CARBON	390	5%	1/6W	
R131	1-247-897-00	CARBON	560K	5%	1/6W	
R132	1-249-429-11	CARBON	10K	5%	1/6W	
R133	1-249-434-11	CARBON	27K	5%	1/6W	
R134	1-249-434-11	CARBON	27K	5%	1/6W	
R135	1-249-429-11	CARBON	10K	5%	1/6W	
R136	1-249-429-11	CARBON	10K	5%	1/6W	
R137	1-249-421-11	CARBON	2.2K	5%	1/6W	
R138	1-249-429-11	CARBON	10K	5%	1/6W	
R139	1-249-421-11	CARBON	2.2K	5%	1/6W	
R141	1-247-819-00	CARBON	330	5%	1/6W	
R142	1-247-843-00	CARBON	3.3K	5%	1/6W	
R143 ⚠	1-247-831-91	CARBON	1K	5%	1/6W	
R146	1-247-831-00	CARBON	1K	5%	1/6W	
R147	1-247-831-00	CARBON	1K	5%	1/6W	
R148	1-247-831-00	CARBON	1K	5%	1/6W	
R149	1-247-787-00	CARBON	15	5%	1/6W	
R150	1-247-851-00	CARBON	6.8K	5%	1/6W	
R151	1-247-851-00	CARBON	6.8K	5%	1/6W	
R302	1-247-867-00	CARBON	33K	5%	1/6W	
R304	1-247-883-00	CARBON	150K	5%	1/6W	
R305	1-249-429-11	CARBON	10K	5%	1/6W	
R306	1-247-869-00	CARBON	39K	5%	1/6W	
R307	1-247-877-00	CARBON	82K	5%	1/6W	
R308	1-247-877-00	CARBON	82K	5%	1/6W	
R309	1-247-885-00	CARBON	180K	5%	1/6W	
R311	1-247-883-00	CARBON	150K	5%	1/6W	
R312	1-249-429-11	CARBON	10K	5%	1/6W	
R313	1-247-841-00	CARBON	2.7K	5%	1/6W	
R314	1-215-467-00	METAL	82K	1%	1/6W	
R315	1-215-400-91	METAL	130	1%	1/6W	
R316	1-215-400-91	METAL	130	1%	1/6W	
R317	1-215-420-00	METAL	910	1%	1/6W	
R318	1-215-433-00	METAL	3.3K	1%	1/6W	
R319	1-249-437-11	CARBON	47K	5%	1/6W	
R320	1-249-421-11	CARBON	2.2K	5%	1/6W	
R321	1-249-429-11	CARBON	10K	5%	1/6W	
R322	1-247-859-00	CARBON	15K	5%	1/6W	
R323	1-249-437-11	CARBON	47K	5%	1/6W	
R324	1-249-437-11	CARBON	47K	5%	1/6W	
R325	1-247-879-00	CARBON	100K	5%	1/6W	
R326	1-247-863-00	CARBON	22K	5%	1/6W	
R329	1-215-485-00	METAL	470K	1%	1/6W	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R330	1-215-485-00	METAL	470K	1%	1/6W	
R331	1-247-889-00	CARBON	270K	5%	1/6W	
R332	1-247-889-00	CARBON	270K	5%	1/6W	
R333	1-247-879-00	CARBON	100K	5%	1/6W	
R334	1-247-867-00	CARBON	33K	5%	1/6W	
R335	1-247-859-00	CARBON	15K	5%	1/6W	
R336	1-249-429-11	CARBON	10K	5%	1/6W	
R337	1-249-429-11	CARBON	10K	5%	1/6W	
R338	1-247-875-00	CARBON	68K	5%	1/6W	
R339	1-247-867-00	CARBON	33K	5%	1/6W	
R340	1-249-437-11	CARBON	47K	5%	1/6W	
R341	1-247-879-00	CARBON	100K	5%	1/6W	
R343	1-247-831-00	CARBON	1K	5%	1/6W	
R344	1-247-847-00	CARBON	4.7K	5%	1/6W	
R345	1-247-873-00	CARBON	56K	5%	1/6W	
R346	1-249-437-11	CARBON	47K	5%	1/6W	
R347	1-247-863-00	CARBON	22K	5%	1/6W	
R348	1-247-881-00	CARBON	120K	5%	1/6W	
R349	1-247-807-00	CARBON	100	5%	1/6W	
R350	1-247-903-00	CARBON	1M	5%	1/6W	
R351	⚠.1-212-356-61	METAL OXIDE	0.47	5%	1W	F
R352	1-247-861-00	CARBON	18K	5%	1/6W	
R353	1-249-429-11	CARBON	10K	5%	1/6W	
R354	1-247-861-00	CARBON	18K	5%	1/6W	
R355	1-247-879-00	CARBON	100K	5%	1/6W	
R356	1-249-437-11	CARBON	47K	5%	1/6W	
R357	1-249-434-11	CARBON	27K	5%	1/6W	
R358	1-247-867-00	CARBON	33K	5%	1/6W	
R359	1-247-867-00	CARBON	33K	5%	1/6W	
R360	1-247-831-00	CARBON	1K	5%	1/6W	
R361	1-247-867-00	CARBON	33K	5%	1/6W	
R362	1-249-429-11	CARBON	10K	5%	1/6W	
R363	1-247-867-00	CARBON	33K	5%	1/6W	
R364	1-247-807-00	CARBON	100	5%	1/6W	
R365	⚠.1-212-360-61	METAL OXIDE	1	5%	1W	F
R366	1-247-831-00	CARBON	1K	5%	1/6W	
R367	⚠.1-212-368-61	METAL OXIDE	4.7	5%	1W	F
R368	1-247-833-00	CARBON	1.2K	5%	1/6W	
R369	1-247-833-00	CARBON	1.2K	5%	1/6W	
R370	1-247-847-00	CARBON	4.7K	5%	1/6W	
R371	1-247-847-00	CARBON	4.7K	5%	1/6W	
R372	1-247-831-00	CARBON	1K	5%	1/6W	
R373	1-249-429-11	CARBON	10K	5%	1/6W	
R374	1-247-859-00	CARBON	15K	5%	1/6W	
R375	1-247-879-00	CARBON	100K	5%	1/6W	
R376	1-247-895-00	CARBON	470K	5%	1/6W	
R377	1-249-437-11	CARBON	47K	5%	1/6W	
R378	1-249-437-11	CARBON	47K	5%	1/6W	
R379	1-249-429-11	CARBON	10K	5%	1/6W	
R380	1-249-437-11	CARBON	47K	5%	1/6W	
R381	1-247-863-00	CARBON	22K	5%	1/6W	
R382	1-247-895-00	CARBON	470K	5%	1/6W	
R383	1-247-867-00	CARBON	33K	5%	1/6W	

Ref.No	Part No.	Description				Remark
R384	1-247-837-00	CARBON	1.8K	5%	1/6W	
R385	1-247-869-00	CARBON	39K	5%	1/6W	
R388	1-247-891-00	CARBON	330K	5%	1/6W	
R389	1-247-903-00	CARBON	1M	5%	1/6W	
R390	1-247-831-00	CARBON	1K	5%	1/6W	
R391	1-249-419-11	CARBON	1.5K	5%	1/6W	
R392	1-249-429-11	CARBON	10K	5%	1/6W	
R393	1-247-859-00	CARBON	15K	5%	1/6W	
R394	1-247-879-00	CARBON	100K	5%	1/6W	
R395	1-247-883-00	CARBON	150K	5%	1/6W	
R396	1-247-859-00	CARBON	15K	5%	1/6W	
R397	1-247-867-00	CARBON	33K	5%	1/6W	
R398	1-247-867-00	CARBON	33K	5%	1/6W	
R399	1-247-850-00	CARBON	6.2K	5%	1/6W	
R400	1-247-903-00	CARBON	1M	5%	1/6W	
R401	1-247-879-00	CARBON	100K	5%	1/6W	
R402	1-247-889-00	CARBON	270K	5%	1/6W	
R403	1-247-895-00	CARBON	470K	5%	1/6W	
R404	1-249-437-11	CARBON	47K	5%	1/6W	
R405	1-247-861-00	CARBON	18K	5%	1/6W	
R406	1-247-859-00	CARBON	15K	5%	1/6W	
R407	1-247-831-00	CARBON	1K	5%	1/6W	
R408	1-247-863-00	CARBON	22K	5%	1/6W	
R409	1-247-863-00	CARBON	22K	5%	1/6W	
R410	1-247-867-00	CARBON	33K	5%	1/6W	
R413	1-249-437-11	CARBON	47K	5%	1/6W	
R415	1-249-437-11	CARBON	47K	5%	1/6W	
R417	1-247-857-00	CARBON	12K	5%	1/6W	
R418	1-247-859-00	CARBON	15K	5%	1/6W	
R419	1-249-421-11	CARBON	2.2K	5%	1/6W	
R420	1-249-437-11	CARBON	47K	5%	1/6W	
R421	1-247-843-00	CARBON	3.3K	5%	1/6W	
R422	1-249-429-11	CARBON	10K	5%	1/6W	
R424	1-249-419-11	CARBON	1.5K	5%	1/6W	
R425	1-249-437-11	CARBON	47K	5%	1/6W	
R426	1-249-437-11	CARBON	47K	5%	1/6W	
R427	1-247-859-00	CARBON	15K	5%	1/6W	
R428	1-249-434-11	CARBON	27K	5%	1/6W	
R429	1-249-429-11	CARBON	10K	5%	1/6W	
R430	1-247-831-00	CARBON	1K	5%	1/6W	
R431	1-249-429-11	CARBON	10K	5%	1/6W	
R440	1-247-877-00	CARBON	82K	5%	1/6W	
R442	1-249-437-11	CARBON	47K	5%	1/6W	
R443	1-249-437-11	CARBON	47K	5%	1/6W	
R448	⚠.1-247-815-91	CARBON	220	5%	1/6W	
R449	1-247-851-00	CARBON	6.8K	5%	1/6W	
R450	1-249-437-11	CARBON	47K	5%	1/6W	
R451	1-249-429-11	CARBON	10K	5%	1/6W	
R452	1-249-437-11	CARBON	47K	5%	1/6W	
R453	1-247-867-00	CARBON	33K	5%	1/6W	
R454	1-249-437-11	CARBON	47K	5%	1/6W	
R455	1-249-437-11	CARBON	47K	5%	1/6W	
R456	1-247-879-00	CARBON	100K	5%	1/6W	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

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Ref.No	Part No.	Description				Remark
R457	1-249-437-11	CARBON	47K	5%	1/6W	
R458	1-249-429-11	CARBON	10K	5%	1/6W	
R459	1-249-421-11	CARBON	2.2K	5%	1/6W	
R460	1-247-859-00	CARBON	15K	5%	1/6W	
R461	1-247-863-00	CARBON	22K	5%	1/6W	
R462	1-247-891-00	CARBON	330K	5%	1/6W	
R464	1-249-437-11	CARBON	47K	5%	1/6W	
R465	1-249-437-11	CARBON	47K	5%	1/6W	
R466	1-247-837-00	CARBON	1.8K	5%	1/6W	
R467	1-247-831-00	CARBON	1K	5%	1/6W	
R468	1-249-419-11	CARBON	1.5K	5%	1/6W	
R470	1-247-843-00	CARBON	3.3K	5%	1/6W	
R471	1-247-883-00	CARBON	150K	5%	1/6W	
R472	1-247-903-00	CARBON	1M	5%	1/6W	
R473	1-247-903-00	CARBON	1M	5%	1/6W	
R474	1-247-849-00	CARBON	5.6K	5%	1/6W	
R480	1-249-429-11	CARBON	10K	5%	1/6W	
R481	1-247-879-00	CARBON	100K	5%	1/6W	
R482	1-247-862-00	CARBON	20K	5%	1/6W	
R483	1-247-859-00	CARBON	15K	5%	1/6W	
R486	1-249-437-11	CARBON	47K	5%	1/6W	
R487	1-249-437-11	CARBON	47K	5%	1/6W	
R488	1-247-871-00	CARBON	47K	5%	1/6W	
R492	1-249-437-11	CARBON	47K	5%	1/6W	
R501	1-249-437-11	CARBON	47K	5%	1/6W	
R502	1-247-859-00	CARBON	15K	5%	1/6W	
R503	1-249-421-11	CARBON	2.2K	5%	1/6W	
R504	1-247-803-00	CARBON	68	5%	1/6W	
R505	1-247-831-00	CARBON	1K	5%	1/6W	
R506	1-249-429-11	CARBON	10K	5%	1/6W	
R507	1-249-429-11	CARBON	10K	5%	1/6W	
R508	1-247-879-00	CARBON	100K	5%	1/6W	
R509	1-247-879-00	CARBON	100K	5%	1/6W	
R510	1-247-843-00	CARBON	3.3K	5%	1/6W	
R511	1-249-429-11	CARBON	10K	5%	1/6W	
R512	1-249-429-11	CARBON	10K	5%	1/6W	
R513	1-249-429-11	CARBON	10K	5%	1/6W	
R623	1-249-421-11	CARBON	2.2K	5%	1/6W	
R624	1-249-437-11	CARBON	47K	5%	1/6W	
R625	1-249-437-11	CARBON	47K	5%	1/6W	
R626	1-249-437-11	CARBON	47K	5%	1/6W	
R631	1-249-437-11	CARBON	47K	5%	1/6W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV101	1-228-991-00	RES, ADJ, CARBON 2.2K	
RV102	1-228-270-00	RES, VAR, CARBON 10K	
RV103	1-228-994-00	RES, ADJ, CARBON 10K	
RV301	1-228-750-00	RES, ADJ, CARBON 47K	
RV302	1-228-995-00	RES, ADJ, CARBON 22K	
RV303	1-228-997-00	RES, ADJ, CARBON 100K	
RV304	1-228-997-00	RES, ADJ, CARBON 100K	
RV305	1-228-997-00	RES, ADJ, METAL GLAZE 100K	
RV306	1-228-996-00	RES, ADJ, METAL GLAZE 47K	
RV307	1-228-992-11	RES, ADJ, METAL GLAZE 3.3K	
RV308	1-228-997-00	RES, ADJ, METAL GLAZE 100K	
RV315	1-228-994-00	RES, ADJ, CARBON 10K	
RV316	1-228-994-00	RES, ADJ, CARBON 10K	
RV317	1-228-753-00	RES, ADJ, CARBON 470K	
RV601	1-228-993-00	RES, ADJ, CARBON 4.7K	
RV602	1-228-993-00	RES, ADJ, CARBON 4.7K	
RV603	1-228-993-00	RES, ADJ, CARBON 4.7K	
RV604	1-228-993-00	RES, ADJ, CARBON 4.7K	

CRYSTAL

X101	1-527-726-00	VIBRATOR, CRYSTAL (4MHz)
X102	1-527-965-00	OSCILLATOR, CERAMIC (800KHz)
X103	1-527-822-00	OSCILLATOR, CERAMIC (4MHz)

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*1-617-383-11 QV-1 BOARD
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CAPACITOR

C200	1-123-617-00	ELECT	10MF	20%	16V

DIODE

D200	8-719-000-06	DIODE MC921
D201	8-719-000-04	DIODE MC911
D202	8-719-000-04	DIODE MC911
D203	8-719-000-06	DIODE MC921
D204	8-719-000-04	DIODE MC911
D205	8-719-000-06	DIODE MC921
D206	8-719-911-19	DIODE 1SS119

TRANSISTOR

Q200	8-729-900-89	TRANSISTOR DTC144ES
Q201	8-729-900-89	TRANSISTOR DTC144ES
Q202	8-729-900-89	TRANSISTOR DTC144ES
Q203	8-729-900-89	TRANSISTOR DTC144ES
Q204	8-729-178-54	TRANSISTOR 2SC2785

RESISTOR

R200	1-247-843-00	CARBON	3.3K	5%	1/6W
R201	1-247-843-00	CARBON	3.3K	5%	1/6W
R202	1-249-429-11	CARBON	10K	5%	1/6W
R203	1-247-843-00	CARBON	3.3K	5%	1/6W
R204	1-247-857-00	CARBON	12K	5%	1/6W
R205	1-247-859-00	CARBON	15K	5%	1/6W
R206	1-249-419-11	CARBON	1.5K	5%	1/6W
R207	1-249-429-11	CARBON	10K	5%	1/6W
R208	1-249-429-11	CARBON	10K	5%	1/6W
R209	1-247-879-00	CARBON	100K	5%	1/6W
R210	1-247-897-00	CARBON	560K	5%	1/6W

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When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
	*A-6717-408-A	DR-33 BOARD, COMPLETE **********************			
		CAPACITOR			
C001	1-123-381-00	ELECT	2.2MF	20%	50V
C002	1-123-381-00	ELECT	2.2MF	20%	50V
C005	1-161-059-00	CERAMIC	0.047MF	10%	25V
C006	1-129-794-00	FILM	0.0033MF	5%	100V
C007	1-129-794-00	FILM	0.0033MF	5%	100V
C008	1-161-059-00	CERAMIC	0.047MF	10%	25V
C009	1-161-059-00	CERAMIC	0.047MF	10%	25V
C010	1-123-330-00	ELECT	22MF	20%	16V
C011	1-102-973-00	CERAMIC	100PF	5%	50V
C012	1-161-059-00	CERAMIC	0.047MF	10%	25V
		CONNECTOR			
CN001	*1-564-010-11	PIN, CONNECTOR 11P			
CN002	*1-560-892-00	PIN, CONNECTOR 4P			
CN003	*1-560-891-00	PIN, CONNECTOR 3P			
CN004	*1-564-009-00	PIN, CONNECTOR 10P			
CN005	*1-560-892-00	PIN, CONNECTOR 4P			
CN006	*1-560-890-00	PIN, CONNECTOR 2P			
CN007	*1-560-891-00	PIN, CONNECTOR 3P			
CN008	*1-560-890-00	PIN, CONNECTOR 2P			
CN010	*1-560-468-00	PIN, CONNECTOR 5P			
CN011	*1-560-466-00	PIN, CONNECTOR 3P			
CN012	*1-560-891-00	PIN, CONNECTOR 3P			
CN013	*1-564-005-00	PIN, CONNECTOR 6P			
CN014	*1-564-005-00	PIN, CONNECTOR 6P			
CN015	*1-564-003-00	PIN, CONNECTOR 4P			
CN017	*1-560-900-00	PIN, CONNECTOR 12P			
CN018	*1-564-011-11	PIN, CONNECTOR 12P			
CN019	*1-564-011-11	PIN, CONNECTOR 12P			
CN020	*1-564-010-41	PIN, CONNECTOR 11P			
		IC			
IC002	8-759-800-72	IC LA7205			
		RESISTOR			
R001	1-247-831-00	CARBON	1K	5%	1/6W
R002	1-247-815-00	CARBON	220	5%	1/6W
R003	1-247-831-00	CARBON	1K	5%	1/6W
R004	1-247-815-00	CARBON	220	5%	1/6W
R019	1-247-861-00	CARBON	18K	5%	1/6W
R020	1-247-862-00	CARBON	20K	5%	1/6W
R021	1-247-873-00	CARBON	56K	5%	1/6W
**					
	*A-6721-248-A	TA-36 BOARD, COMPLETE (ES MODEL) **********************			
	*3-662-227-00	HOLDER (R-3), LED			
	*3-674-390-00	HOLDER (B), LED			

Ref.No	Part No.	Description			Remark
		STORAGE BATTERY			
B701	1-528-175-11	BATTERY, STORAGE			
		CAPACITOR			
C001	1-102-529-00	CERAMIC	100PF	5%	50V
C002	1-102-529-00	CERAMIC	100PF	5%	50V
C003	1-102-947-00	CERAMIC	10PF	5%	50V
C004	1-102-523-00	CERAMIC	56PF	5%	50V
C005	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C006	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C007	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C008	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C009	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C010	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C011	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C012	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C013	1-123-369-00	ELECT	4.7MF	20%	25V
C014	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C015	1-161-059-00	CERAMIC	0.047MF	10%	25V
C016	1-102-529-00	CERAMIC	100PF	5%	50V
C017	1-102-963-00	CERAMIC	33PF	5%	50V
C018	1-102-504-00	CERAMIC	4PF	0.25PF	50V
C019	1-102-529-00	CERAMIC	100PF	5%	50V
C020	1-102-504-00	CERAMIC	4PF	0.25PF	50V
C021	1-102-963-00	CERAMIC	33PF	5%	50V
C022	1-123-333-00	ELECT	100MF	20%	16V
C023	1-161-013-00	CERAMIC	0.01MF	10%	25V
C024	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C025	1-123-379-00	ELECT	0.47MF	20%	50V
C026	1-101-361-00	CERAMIC	150PF	5%	50V
C027	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C028	1-123-286-00	ELECT	0.33MF	20%	50V
C029	1-161-013-00	CERAMIC	0.01MF	10%	25V
C030	1-101-361-00	CERAMIC	150PF	5%	50V
C031	1-123-380-00	ELECT	1MF	20%	50V
C032	1-130-014-00	FILM	470PF	5%	50V
C033	1-102-525-00	CERAMIC	68PF	5%	50V
C034	1-161-055-00	CERAMIC	0.022MF	10%	25V
C035	1-161-055-00	CERAMIC	0.022MF	10%	25V
C036	1-161-055-00	CERAMIC	0.022MF	10%	25V
C037	1-123-332-00	ELECT	47MF	20%	16V
C038	1-130-478-00	MYLAR	0.0039MF	5%	50V
C039	1-130-478-00	MYLAR	0.0039MF	5%	50V
C040	1-130-478-00	MYLAR	0.0039MF	5%	50V
C041	1-123-380-00	ELECT	1MF	20%	50V
C042	1-123-380-00	ELECT	1MF	20%	50V
C043	1-123-332-00	ELECT	47MF	20%	16V
C044	1-123-356-00	ELECT	10MF	20%	16V
C045	1-123-356-00	ELECT	10MF	20%	16V
C046	1-161-059-00	CERAMIC	0.047MF	10%	25V
C047	1-123-333-00	ELECT	100MF	20%	16V
C048	1-123-308-00	ELECT	220MF	20%	10V

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description			Remark
C049	1-136-147-00	FILM	0.0033MF	5%	50V
C050	1-130-014-00	FILM	470PF	5%	50V
C051	1-161-055-00	CERAMIC	0.022MF	10%	25V
C052	1-161-059-00	CERAMIC	0.047MF	10%	25V
C053	1-136-244-11	FILM	0.1MF	2%	50V
C054	1-136-244-11	FILM	0.1MF	2%	50V
C055	1-123-330-00	ELECT	22MF	20%	16V
C056	1-136-243-11	FILM	0.047MF	2%	50V
C057	1-136-243-11	FILM	0.047MF	2%	50V
C058	1-123-333-00	ELECT	100MF	20%	16V
C059	1-123-333-00	ELECT	100MF	20%	16V
C060	1-123-356-00	ELECT	10MF	20%	16V
C061	1-161-013-00	CERAMIC	0.01MF	10%	25V
C062	1-123-356-00	ELECT	10MF	20%	16V
C063	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C064	1-161-013-00	CERAMIC	0.01MF	10%	25V
C065	1-102-963-00	CERAMIC	33PF	5%	50V
C066	1-130-493-00	MYLAR	0.068MF	5%	50V
C067	1-130-493-00	MYLAR	0.068MF	5%	50V
C068	1-130-495-00	MYLAR	0.1MF	5%	50V
C069	1-102-973-00	CERAMIC	100PF	5%	50V
C070	1-123-380-00	ELECT	1MF	20%	50V
C072	1-161-013-00	CERAMIC	0.01MF	10%	25V
C073	1-161-047-00	CERAMIC	0.0047MF	20%	25V
C074	1-102-116-00	CERAMIC	680PF	10%	50V
C075	1-102-963-00	CERAMIC	33PF	5%	50V
C076	1-102-963-00	CERAMIC	33PF	5%	50V
C077	1-123-381-00	ELECT	2.2MF	20%	50V
C078	1-161-059-00	CERAMIC	0.047MF	10%	25V
C079	1-161-013-00	CERAMIC	0.01MF	10%	25V
C080	1-161-013-00	CERAMIC	0.01MF	10%	25V
C081	1-123-332-00	ELECT	47MF	20%	16V
C082	1-123-356-00	ELECT	10MF	20%	50V
C083	1-123-380-00	ELECT	1MF	20%	50V
C201	1-102-123-00	CERAMIC	0.0033MF	10%	50V
C301	1-123-356-00	ELECT	10MF	20%	50V
C501	1-123-356-00	ELECT	10MF	20%	16V
C502	1-123-381-00	ELECT	2.2MF	20%	50V
C503	1-123-332-00	ELECT	47MF	20%	16V
C504	2-203-074-91	CERAMIC	0.001MF		
C505	1-123-369-00	ELECT	4.7MF	20%	25V
C508	1-102-961-00	CERAMIC	27PF	5%	50V
C511	1-123-369-00	ELECT	4.7MF	20%	25V
C512	1-123-332-00	ELECT	47MF	20%	16V
C513	1-161-013-00	CERAMIC	0.01MF	10%	25V
C601	1-101-004-00	CERAMIC	0.01MF		50V
C602	1-101-004-00	CERAMIC	0.01MF		50V
C603	1-123-356-00	ELECT	10MF	20%	16V
C604	1-123-382-00	ELECT	3.3MF	20%	50V
C605	1-101-001-00	CERAMIC	0.001MF		50V
C606	1-101-004-00	CERAMIC	0.01MF		50V
C608	1-123-380-00	ELECT	1MF	20%	50V
C701	1-123-330-00	ELECT	22MF	20%	16V

Ref.No	Part No.	Description			Remark
C702	1-123-330-00	ELECT	22MF	20%	16V
C703	1-102-121-00	CERAMIC	0.0022MF	10%	50V
C704	1-123-381-00	ELECT	2.2MF	20%	50V
C705	1-123-330-00	ELECT	22MF	20%	16V
C706	1-123-308-00	ELECT	220MF	20%	10V
C800	1-101-004-00	CERAMIC	0.01MF		50V
C801	1-130-483-00	MYLAR	0.01MF	5%	50V
C802	1-136-164-00	MYLAR	0.082MF	5%	50V
C803	1-161-025-00	CERAMIC	0.1MF	10%	25V
C901	1-123-332-00	ELECT	47MF	20%	16V
C902	1-102-111-00	CERAMIC	270PF	10%	50V
C903	1-130-474-00	MYLAR	0.0018MF	5%	50V
C904	1-123-332-00	ELECT	47MF	20%	16V
C905	1-123-332-00	ELECT	47MF	20%	16V
C906	1-123-369-00	ELECT	4.7MF	20%	25V
C907	1-130-473-00	MYLAR	0.0015MF	5%	50V
C908	1-130-483-00	MYLAR	0.01MF	5%	50V
C909	1-123-332-00	ELECT	47MF	20%	16V
C910	1-123-332-00	ELECT	47MF	20%	16V
C911	1-130-471-00	MYLAR	0.001MF	5%	50V
C912	1-123-332-00	ELECT	47MF	20%	16V
C913	1-123-356-00	ELECT	10MF	20%	16V
C914	1-123-330-00	ELECT	22MF	20%	16V
C915	1-123-379-00	ELECT	0.47MF	20%	50V
C916	1-123-332-00	ELECT	47MF	20%	16V
C917	1-130-481-00	MYLAR	0.0068MF	5%	50V
C918	1-123-356-00	ELECT	10MF	20%	16V
C919	1-130-477-00	MYLAR	0.0033MF	5%	50V
C920	1-130-479-00	MYLAR	0.0047MF	5%	50V
C921	1-123-332-00	ELECT	47MF	20%	16V
C922	1-136-215-51	FILM	0.0068MF		400V
C923	1-107-080-00	MICA	62PF	5%	50V
C951	1-123-332-00	ELECT	47MF	20%	16V

FILTER

Ref.No	Part No.	Description
CF001	1-527-840-00	FILTER, CERAMIC
CF002	1-527-839-00	FILTER, CERAMIC
CF003	1-527-822-00	OSCILLATOR, CERAMIC

CONNECTOR

Ref.No	Part No.	Description
CN001	*1-560-891-00	PIN, CONNECTOR 3P
CN002	*1-560-896-00	PIN, CONNECTOR 8P
CN003	*1-560-894-00	PIN, CONNECTOR 6P
CN004	*1-560-900-00	PIN, CONNECTOR 12P
CN501	*1-560-892-00	PIN, CONNECTOR 4P
CN502	*1-560-896-00	PIN, CONNECTOR 8P
CN901	*1-564-030-00	PIN, CONNECTOR 5P
CN902	*1-564-033-00	PIN, CONNECTOR 8P

TRIMMER

Ref.No	Part No.	Description
CT001	1-404-134-00	TRAP, CERAMIC (5.5MHZ)

When indicating parts by reference number, please include the board name.

DIODE

Ref.No	Part No.	Description	Remark
D001	8-719-911-19	DIODE 1SS119	
D003	8-719-911-19	DIODE 1SS119	
D004	8-719-911-19	DIODE 1SS119	
D005	*8-719-812-33	DIODE TLG123A	
D006	8-719-812-32	DIODE TLY123	
D007	8-719-812-31	DIODE TLR123	
D008	8-719-000-12	DIODE MC931	
D009	8-719-812-31	DIODE TLR123	
D010	8-719-200-02	DIODE 10E-2	
D011	8-719-911-19	DIODE 1SS119	
D301	8-719-000-12	DIODE MC931	
D505	8-719-911-19	DIODE 1SS119	
D508	8-719-911-19	DIODE 1SS119	
D601	8-719-911-19	DIODE 1SS119	
D602	8-719-911-19	DIODE 1SS119	
D603	8-719-911-19	DIODE 1SS119	
D604	8-719-911-19	DIODE 1SS119	
D605	8-719-911-19	DIODE 1SS119	
D607	8-719-911-19	DIODE 1SS119	
D608	8-719-911-19	DIODE 1SS119	
D609	8-719-911-19	DIODE 1SS119	
D701	8-719-911-19	DIODE 1SS119	
D702	8-719-911-19	DIODE 1SS119	
D703	8-719-100-31	DIODE RD5.1EB3	
D704	8-719-911-19	DIODE 1SS119	
D705	8-719-911-19	DIODE 1SS119	
D706	8-719-911-19	DIODE 1SS119	
D707	8-719-911-19	DIODE 1SS119	
D901	8-719-000-06	DIODE MC921	
D902	8-719-911-19	DIODE 1SS119	

IC

Ref.No	Part No.	Description	Remark
IC001	8-759-276-07	IC TA7607AP	
IC002	8-759-909-54	IC TDA2546A	
IC003	6-066-721-70	IC TDA3800GS	
IC004	8-759-145-58	IC UPC4558C	
IC005	8-759-602-16	IC M54572L	
IC006	8-759-157-40	IC UPC574J	
IC007	8-759-603-11	IC M50160-115SP	
IC008	8-759-600-66	IC M58653P	
IC009	8-759-105-50	IC UPD7507SC-068	
IC601	8-759-205-76	IC TC504013BP	
IC901	8-759-101-73	IC UPC1513HA	
IC902	8-759-802-11	IC LA7091	

COIL

Ref.No	Part No.	Description	Remark
L001	1-408-397-00	MICRO INDUCTOR 1UH	
L002	1-408-592-41	MICRO INDUCTOR 1.2UH	
L003	1-408-406-00	MICRO INDUCTOR 5.6UH	
L004	1-408-406-00	MICRO INDUCTOR 5.6UH	
L005	1-408-405-00	MICRO INDUCTOR 4.7UH	
L006	1-408-406-00	MICRO INDUCTOR 5.6UH	
L007	1-408-403-00	MICRO INDUCTOR 3.3UH	
L008	1-408-397-00	MICRO INDUCTOR 1UH	
L009	1-408-421-00	MICRO INDUCTOR 100UH	
L501	1-408-421-00	MICRO INDUCTOR 100UH	
L502	1-408-417-00	MICRO INDUCTOR 47UH	
L503	1-408-417-00	MICRO INDUCTOR 47UH	
L701	1-407-168-XX	MICRO INDUCTOR 82UH	
L901	1-407-508-00	MICRO INDUCTOR 22MMH	
L902	1-407-510-00	MICRO INDUCTOR 27MMH	
L903	1-410-120-11	MICRO INDUCTOR 1.2MMH	

VARIABLE COIL

Ref.No	Part No.	Description	Remark
LV901	1-408-713-00	VARIABLE INDUCTOR	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q001	8-729-203-28	TRANSISTOR 2SC2216	
Q002	8-729-245-83	TRANSISTOR 2SC2458	
Q003	8-729-900-74	TRANSISTOR DTC143TS	
Q004	8-729-900-74	TRANSISTOR DTC143TS	
Q005 ⚠	8-729-374-02	TRANSISTOR 2SB740	
Q006	8-729-900-89	TRANSISTOR DTC144ES	
Q007	8-729-245-83	TRANSISTOR 2SC2458	
Q008	8-729-245-83	TRANSISTOR 2SC2458	
Q009	8-729-245-83	TRANSISTOR 2SC2458	
Q011	8-729-204-83	TRANSISTOR 2SA1048	
Q012	8-729-204-83	TRANSISTOR 2SA1048	
Q013	8-729-900-89	TRANSISTOR DTC144ES	
Q014	8-729-900-89	TRANSISTOR DTC144ES	
Q015	8-729-900-89	TRANSISTOR DTC144ES	
Q201	8-729-204-83	TRANSISTOR 2SA1048	
Q202	8-729-245-83	TRANSISTOR 2SC2458	
Q301	8-729-900-65	TRANSISTOR DTA144ES	
Q501	8-729-245-83	TRANSISTOR 2SC2458	
Q502	8-729-204-83	TRANSISTOR 2SA1048	
Q503	8-729-384-48	TRANSISTOR 2SA844	
Q504	8-729-245-83	TRANSISTOR 2SC2458	
Q505	8-729-245-83	TRANSISTOR 2SC2458	
Q506	8-729-245-83	TRANSISTOR 2SC2458	
Q507	8-729-178-54	TRANSISTOR 2SC2785	
Q508	8-729-900-89	TRANSISTOR DTC144ES	
Q509	8-729-117-52	TRANSISTOR 2SA1175	
Q601	8-729-900-89	TRANSISTOR DTC144ES	
Q602	8-729-245-83	TRANSISTOR 2SC2458	
Q603	8-729-245-83	TRANSISTOR 2SC2458	
Q604	8-729-900-89	TRANSISTOR DTC144ES	
Q605	8-729-900-89	TRANSISTOR DTC144ES	
Q606	8-729-245-83	TRANSISTOR 2SC2458	
Q607	8-729-245-83	TRANSISTOR 2SC2458	
Q608	8-729-245-83	TRANSISTOR 2SC2458	
Q609	8-729-245-83	TRANSISTOR 2SC2458	
Q610	8-729-900-89	TRANSISTOR DTC144ES	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description				Remark
Q701	8-729-177-32	TRANSISTOR 2SD773				
Q702	8-729-245-83	TRANSISTOR 2SC2458				
Q703	8-729-900-80	TRANSISTOR DTC114ES				
Q704	8-729-204-83	TRANSISTOR 2SA1048				
Q800	8-729-900-89	TRANSISTOR DTC144ES				
Q802	8-729-900-89	TRANSISTOR DTC144ES				
Q901	8-729-900-89	TRANSISTOR DTC144ES				
Q904	8-729-245-83	TRANSISTOR 2SC2458				
Q906	8-729-177-43	TRANSISTOR 2SD774				
Q907	8-729-245-83	TRANSISTOR 2SC2458				
		RESISTOR				
R001	1-249-421-11	CARBON	2.2K	5%	1/6W	
R002	1-247-847-00	CARBON	4.7K	5%	1/6W	
R003	1-247-815-00	CARBON	220	5%	1/6W	
R004	1-247-819-00	CARBON	330	5%	1/6W	
R005	1-247-813-00	CARBON	180	5%	1/6W	
R006	1-247-837-00	CARBON	1.8K	5%	1/6W	
R007	1-249-419-11	CARBON	1.5K	5%	1/6W	
R008	1-247-867-00	CARBON	33K	5%	1/6W	
R009	1-247-879-00	CARBON	100K	5%	1/6W	
R010	1-247-879-00	CARBON	100K	5%	1/6W	
R011	1-247-901-00	CARBON	820K	5%	1/6W	
R012	1-247-831-00	CARBON	1K	5%	1/6W	
R013	1-247-813-00	CARBON	180	5%	1/6W	
R014	1-247-807-00	CARBON	100	5%	1/6W	
R015	1-247-817-00	CARBON	270	5%	1/6W	
R016	1-247-815-00	CARBON	220	5%	1/6W	
R017	1-247-847-00	CARBON	4.7K	5%	1/6W	
R018	1-247-829-00	CARBON	820	5%	1/6W	
R019	1-247-829-00	CARBON	820	5%	1/6W	
R020	1-247-829-00	CARBON	820	5%	1/6W	
R021	1-247-891-00	CARBON	330K	5%	1/6W	
R022	1-249-437-11	CARBON	47K	5%	1/6W	
R023	1-247-853-00	CARBON	8.2K	5%	1/6W	
R024	1-247-863-00	CARBON	22K	5%	1/6W	
R025	1-247-853-00	CARBON	8.2K	5%	1/6W	
R026	1-247-863-00	CARBON	22K	5%	1/6W	
R027	1-249-429-11	CARBON	10K	5%	1/6W	
R028	1-249-429-11	CARBON	10K	5%	1/6W	
R031	1-247-861-00	CARBON	18K	5%	1/6W	
R032	1-249-434-11	CARBON	27K	5%	1/6W	
R033	1-247-829-00	CARBON	820	5%	1/6W	
R034	1-247-831-00	CARBON	1K	5%	1/6W	
R035	1-215-487-00	METAL	560K	1%	1/6W	
R036	1-215-409-00	METAL	330	1%	1/6W	
R037	1-215-461-00	METAL	47K	1%	1/6W	
R038	1-215-460-00	METAL	43K	1%	1/6W	
R039	1-215-408-00	METAL	300	1%	1/6W	
R040	1-215-486-00	METAL	510K	1%	1/6W	
R041	1-247-831-00	CARBON	1K	5%	1/6W	
R042	1-206-670-00	METAL OXIDE	1.8K	5%	2W	F
R043	1-247-847-00	CARBON	4.7K	5%	1/6W	
R044	1-247-831-00	CARBON	1K	5%	1/6W	
R045	1-247-833-00	CARBON	1.2K	5%	1/6W	
R046	1-249-419-11	CARBON	1.5K	5%	1/6W	
R047	1-249-421-11	CARBON	2.2K	5%	1/6W	
R048	1-247-891-00	CARBON	330K	5%	1/6W	
R049	1-247-863-00	CARBON	22K	5%	1/6W	
R050	1-247-863-00	CARBON	22K	5%	1/6W	
R051	1-247-863-00	CARBON	22K	5%	1/6W	
R052	1-247-863-00	CARBON	22K	5%	1/6W	
R053	1-247-863-00	CARBON	22K	5%	1/6W	
R054	1-247-877-00	CARBON	82K	5%	1/6W	
R055	1-247-851-00	CARBON	6.8K	5%	1/6W	
R056	1-247-843-00	CARBON	3.3K	5%	1/6W	
R058	1-247-867-00	CARBON	33K	5%	1/6W	
R059	1-247-863-00	CARBON	22K	5%	1/6W	
R060	1-247-847-00	CARBON	4.7K	5%	1/6W	
R061	1-247-863-00	CARBON	22K	5%	1/6W	
R062	1-247-867-00	CARBON	33K	5%	1/6W	
R063	1-249-429-11	CARBON	10K	5%	1/6W	
R064	1-249-429-11	CARBON	10K	5%	1/6W	
R065	1-249-429-11	CARBON	10K	5%	1/6W	
R066	1-249-429-11	CARBON	10K	5%	1/6W	
R067	1-247-903-00	CARBON	1M	5%	1/6W	
R068	1-247-831-00	CARBON	1K	5%	1/6W	
R070	1-247-853-00	CARBON	8.2K	5%	1/6W	
R071	1-249-437-11	CARBON	47K	5%	1/6W	
R072	1-249-437-11	CARBON	47K	5%	1/6W	
R073	1-249-437-11	CARBON	47K	5%	1/6W	
R074	1-247-833-00	CARBON	1.2K	5%	1/6W	
R076	1-249-421-11	CARBON	2.2K	5%	1/6W	
R077	1-247-847-00	CARBON	4.7K	5%	1/6W	
R201	1-247-819-00	CARBON	330	5%	1/6W	
R202	1-247-887-00	CARBON	220K	5%	1/6W	
R203	1-247-845-00	CARBON	3.9K	5%	1/6W	
R204	1-247-827-00	CARBON	680	5%	1/6W	
R205	1-247-825-00	CARBON	560	5%	1/6W	
R301	1-249-429-11	CARBON	10K	5%	1/6W	
R302	1-249-429-11	CARBON	10K	5%	1/6W	
R303	1-247-849-00	CARBON	5.6K	5%	1/6W	
R501	1-249-429-11	CARBON	10K	5%	1/6W	
R503	1-247-825-00	CARBON	560	5%	1/6W	
R504	1-249-429-11	CARBON	10K	5%	1/6W	
R505	1-249-429-11	CARBON	10K	5%	1/6W	
R507	1-247-823-00	CARBON	470	5%	1/6W	
R508	1-247-831-00	CARBON	1K	5%	1/6W	
R509	1-249-429-11	CARBON	10K	5%	1/6W	
R510	1-247-847-00	CARBON	4.7K	5%	1/6W	
R511	1-249-429-11	CARBON	10K	5%	1/6W	
R512	1-247-867-00	CARBON	33K	5%	1/6W	
R513	1-247-831-00	CARBON	1K	5%	1/6W	
R514	1-247-807-00	CARBON	100	5%	1/6W	
R516	1-247-815-00	CARBON	220	5%	1/6W	
R517	1-247-825-00	CARBON	560	5%	1/6W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R519	1-247-815-00	CARBON	220	5%	1/6W	
R523	1-247-847-00	CARBON	4.7K	5%	1/6W	
R524	1-247-807-00	CARBON	100	5%	1/6W	
R525	1-247-831-00	CARBON	1K	5%	1/6W	
R526	1-247-837-00	CARBON	1.8K	5%	1/6W	
R527	1-247-807-00	CARBON	100	5%	1/6W	
R601	1-249-429-11	CARBON	10K	5%	1/6W	
R602	1-249-429-11	CARBON	10K	5%	1/6W	
R603	1-249-429-11	CARBON	10K	5%	1/6W	
R604	1-249-429-11	CARBON	10K	5%	1/6W	
R605	1-249-429-11	CARBON	10K	5%	1/6W	
R606	1-249-429-11	CARBON	10K	5%	1/6W	
R607	1-249-429-11	CARBON	10K	5%	1/6W	
R608	1-249-429-11	CARBON	10K	5%	1/6W	
R609	1-247-849-00	CARBON	5.6K	5%	1/6W	
R610	1-247-867-00	CARBON	33K	5%	1/6W	
R611	1-247-867-00	CARBON	33K	5%	1/6W	
R612	1-247-843-00	CARBON	3.3K	5%	1/6W	
R613	1-249-429-11	CARBON	10K	5%	1/6W	
R614	1-247-861-00	CARBON	18K	5%	1/6W	
R615	1-247-869-00	CARBON	39K	5%	1/6W	
R616	1-249-421-11	CARBON	2.2K	5%	1/6W	
R617	1-249-437-11	CARBON	47K	5%	1/6W	
R618	1-249-429-11	CARBON	10K	5%	1/6W	
R619	1-247-847-00	CARBON	4.7K	5%	1/6W	
R620	1-249-429-11	CARBON	10K	5%	1/6W	
R622	1-249-429-11	CARBON	10K	5%	1/6W	
R701	1-247-791-00	CARBON	22	5%	1/6W	
R702	1-247-831-00	CARBON	1K	5%	1/6W	
R703	1-247-831-00	CARBON	1K	5%	1/6W	
R704	1-247-831-00	CARBON	1K	5%	1/6W	
R705	1-247-831-00	CARBON	1K	5%	1/6W	
R706	1-249-429-11	CARBON	10K	5%	1/6W	
R707	1-249-429-11	CARBON	10K	5%	1/6W	
R800	1-247-847-00	CARBON	4.7K	5%	1/6W	
R801	1-247-847-00	CARBON	4.7K	5%	1/6W	
R802 ⚠	**1-212-853-51**	**FUSIBLE**	**6.8**	**5%**	**1/4W**	**F**
R805	1-249-429-11	CARBON	10K	5%	1/6W	
R806	1-247-843-00	CARBON	3.3K	5%	1/6W	
R820	1-247-869-00	CARBON	39K	5%	1/6W	
R821	1-247-861-00	CARBON	18K	5%	1/6W	
R901	1-249-429-11	CARBON	10K	5%	1/6W	
R902	1-247-783-00	CARBON	10	5%	1/6W	
R903	1-247-859-00	CARBON	15K	5%	1/6W	
R904	1-247-831-00	CARBON	1K	5%	1/6W	
R905	1-247-821-00	CARBON	390	5%	1/6W	
R906	1-247-861-00	CARBON	18K	5%	1/6W	
R907	1-247-885-00	CARBON	180K	5%	1/6W	
R908	1-249-429-11	CARBON	10K	5%	1/6W	
R909	1-247-867-00	CARBON	33K	5%	1/6W	
R912	1-247-899-00	CARBON	680K	5%	1/6W	
R913	1-247-867-00	CARBON	33K	5%	1/6W	
R914	1-247-829-00	CARBON	820	5%	1/6W	

Ref.No	Part No.	Description				Remark
R915	1-249-429-11	CARBON	10K	5%	1/6W	
R916	1-247-831-00	CARBON	1K	5%	1/6W	
R917	1-247-807-00	CARBON	100	5%	1/6W	
R919 ⚠	**1-212-853-51**	**FUSIBLE**	**6.8**	**5%**	**1/4W**	**F**
R921	1-247-831-00	CARBON	1K	5%	1/6W	
R922	1-247-859-00	CARBON	15K	5%	1/6W	
R923	1-247-077-00	CARBON	3.3	5%	1/4W	
R925	1-249-437-11	CARBON	47K	5%	1/6W	
R926	1-247-853-00	CARBON	8.2K	5%	1/6W	
R950	1-247-857-00	CARBON	12K	5%	1/6W	
R951	1-247-867-00	CARBON	33K	5%	1/6W	

VARIABLE RESISTOR

RV001	1-228-993-00	RES, ADJ, CARBON 4.7K
RV002	1-228-995-00	RES, ADJ, CARBON 22K
RV901	1-228-994-00	RES, ADJ, CARBON 10K
RV902	1-228-998-00	RES, ADJ, METAL GLAZE 220K

RELAY

RY901	1-515-418-00	RELAY

SWITCH

S001	1-553-997-00	SWITCH, KEY BOARD
S002	1-553-997-00	SWITCH, KEY BOARD
S003	1-553-997-00	SWITCH, KEY BOARD
S004	1-553-997-00	SWITCH, KEY BOARD
S005	1-553-997-00	SWITCH, KEY BOARD
S006	1-553-997-00	SWITCH, KEY BOARD
S007	1-553-997-00	SWITCH, KEY BOARD

FILTER

SAWF001	1-404-438-00	FILTER, SAW

TRANSFORMER

T001	1-404-068-00	COIL, VIF
T002	1-404-068-00	COIL, VIF
T003	1-404-427-00	VIFT
T004	1-404-427-00	VIFT
T005	1-404-477-00	COIL, IF
T006	1-404-465-00	COIL, VIF (MOLD TYPE)
T007	1-404-477-00	COIL, IF
T008	1-404-619-11	COIL, IF
T701	1-446-571-00	TRANSFORMER, CONVERTOR
T901	1-433-275-00	TRANSFORMER, BIAS OSCILLATOR

TUNER

TU001 ⚠	**1-463-577-31**	**TUNER, ET (BT-883AD)**

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The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description	Remark
	*A-6721-258-A	TA-37 BOARD, COMPLETE (E MODEL) ***********************	
	*3-662-227-00	HOLDER (R-3), LED	
	*3-674-390-00	HOLDER (B), LED	

STORAGE BATTERY

Ref.No	Part No.	Description
B701	1-528-175-11	BATTERY, STORAGE

CAPACITOR

Ref.No	Part No.	Description			Remark
C001	1-102-529-00	CERAMIC	100PF	5%	50V
C002	1-102-529-00	CERAMIC	100PF	5%	50V
C003	1-102-947-00	CERAMIC	10PF	5%	50V
C004	1-102-523-00	CERAMIC	56PF	5%	50V
C005	1-161-013-00	CERAMIC	0.01MF	10%	25V
C006	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C007	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C008	1-102-074-00	CERAMIC	0.001MF	10%	50V
C009	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C010	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C011	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C012	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C013	1-123-369-00	ELECT	4.7MF	20%	25V
C014	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C015	1-161-059-00	CERAMIC	0.047MF	10%	25V
C016	1-102-529-00	CERAMIC	100PF	5%	50V
C017	1-102-963-00	CERAMIC	33PF	5%	50V
C018	1-102-504-00	CERAMIC	4PF	0.25PF	50V
C019	1-102-529-00	CERAMIC	100PF	5%	50V
C020	1-102-504-00	CERAMIC	4PF	0.25PF	50V
C021	1-102-963-00	CERAMIC	33PF	5%	50V
C022	1-123-333-00	ELECT	100MF	20%	16V
C023	1-161-013-00	CERAMIC	0.01MF	10%	25V
C024	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C025	1-123-379-00	ELECT	0.47MF	20%	50V
C058	1-123-333-00	ELECT	100MF	20%	16V
C059	1-123-333-00	ELECT	100MF	20%	16V
C060	1-123-356-00	ELECT	10MF	20%	16V
C061	1-161-013-00	CERAMIC	0.01MF	10%	25V
C062	1-123-356-00	ELECT	10MF	20%	16V
C063	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C064	1-161-013-00	CERAMIC	0.01MF	10%	25V
C065	1-102-963-00	CERAMIC	33PF	5%	50V
C066	1-130-493-00	MYLAR	0.068MF	5%	50V
C067	1-130-493-00	MYLAR	0.068MF	5%	50V
C068	1-130-495-00	MYLAR	0.1MF	5%	50V
C069	1-102-973-00	CERAMIC	100PF	5%	50V
C070	1-123-380-00	ELECT	1MF	20%	50V
C072	1-161-013-00	CERAMIC	0.01MF	10%	25V
C073	1-161-047-00	CERAMIC	0.0047MF	20%	25V
C074	1-102-116-00	CERAMIC	680PF	10%	50V
C075	1-102-963-00	CERAMIC	33PF	5%	50V
C076	1-102-963-00	CERAMIC	33PF	5%	50V
C077	1-123-381-00	ELECT	2.2MF	20%	50V
C078	1-161-059-00	CERAMIC	0.047MF	10%	25V
C079	1-161-013-00	CERAMIC	0.01MF	10%	25V
C080	1-161-013-00	CERAMIC	0.01MF	10%	25V
C081	1-123-332-00	ELECT	47MF	20%	16V
C082	1-123-356-00	ELECT	10MF	20%	50V
C083	1-123-332-00	ELECT	47MF	20%	16V
C101	1-102-976-00	CERAMIC	180PF	5%	50V
C102	1-161-013-00	CERAMIC	0.01MF	10%	25V
C103	1-123-318-00	ELECT	33MF	20%	16V
C104	1-102-959-00	CERAMIC	22PF	5%	50V
C106	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C107	1-161-013-00	CERAMIC	0.01MF	10%	25V
C108	1-161-013-00	CERAMIC	0.01MF	10%	25V
C109	1-102-959-00	CERAMIC	22PF	5%	50V
C111	1-161-013-00	CERAMIC	0.01MF	10%	25V
C112	1-161-013-00	CERAMIC	0.01MF	10%	25V
C113	1-102-959-00	CERAMIC	22PF	5%	50V
C115	1-161-013-00	CERAMIC	0.01MF	10%	25V
C116	1-123-380-00	ELECT	1MF	20%	50V
C117	1-123-333-00	ELECT	100MF	20%	16V
C118	1-161-059-00	CERAMIC	0.047MF	10%	25V
C201	1-102-123-00	CERAMIC	0.0033MF	10%	50V
C301	1-123-356-00	ELECT	10MF	20%	50V
C501	1-123-356-00	ELECT	10MF	20%	16V
C502	1-123-381-00	ELECT	2.2MF	20%	50V
C503	1-123-332-00	ELECT	47MF	20%	16V
C504	1-102-074-00	CERAMIC	0.001MF	10%	50V
C505	1-123-369-00	ELECT	4.7MF	20%	25V
C506	1-102-808-00	CERAMIC	6PF		50V
C508	1-102-816-00	CERAMIC	120PF	5%	50V
C511	1-123-369-00	ELECT	4.7MF	20%	25V
C512	1-123-369-00	ELECT	4.7MF	20%	25V
C513	1-161-013-00	CERAMIC	0.01MF	10%	25V
C601	1-101-004-00	CERAMIC	0.01MF		50V
C602	1-101-004-00	CERAMIC	0.01MF		50V
C603	1-123-356-00	ELECT	10MF	20%	16V
C604	1-123-382-00	ELECT	3.3MF	20%	50V
C605	1-101-001-00	CERAMIC	0.001MF		50V
C606	1-101-004-00	CERAMIC	0.01MF		50V
C608	1-123-380-00	ELECT	1MF	20%	50V
C701	1-123-330-00	ELECT	22MF	20%	16V
C702	1-123-330-00	ELECT	22MF	20%	16V
C703	1-102-121-00	CERAMIC	0.0022MF	10%	50V
C704	1-123-381-00	ELECT	2.2MF	20%	50V
C705	1-123-330-00	ELECT	22MF	20%	16V
C706	1-123-308-00	ELECT	220MF	20%	10V
C800	1-101-004-00	CERAMIC	0.01MF		50V
C801	1-130-483-00	MYLAR	0.01MF	5%	50V
C802	1-136-164-00	MYLAR	0.082MF	5%	50V
C803	1-161-025-00	CERAMIC	0.1MF	10%	25V
C901	1-123-332-00	ELECT	47MF	20%	16V
C902	1-102-111-00	CERAMIC	270PF	10%	50V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
C903	1-130-474-00	MYLAR	0.0018MF	5%	50V
C904	1-123-332-00	ELECT	47MF	20%	16V
C905	1-123-332-00	ELECT	47MF	20%	16V
C906	1-123-369-00	ELECT	4.7MF	20%	25V
C907	1-130-473-00	MYLAR	0.0015MF	5%	50V
C908	1-130-483-00	MYLAR	0.01MF	5%	50V
C909	1-123-332-00	ELECT	47MF	20%	16V
C910	1-123-332-00	ELECT	47MF	20%	16V
C911	1-130-471-00	MYLAR	0.001MF	5%	50V
C912	1-123-332-00	ELECT	47MF	20%	16V
C913	1-123-356-00	ELECT	10MF	20%	16V
C915	1-123-379-00	ELECT	0.47MF	20%	50V
C916	1-123-332-00	ELECT	47MF	20%	16V
C917	1-130-481-00	MYLAR	0.0068MF	5%	50V
C918	1-123-356-00	ELECT	10MF	20%	16V
C919	1-130-477-00	MYLAR	0.0033MF	5%	50V
C920	1-130-479-00	MYLAR	0.0047MF	5%	50V
C921	1-123-332-00	ELECT	47MF	20%	16V
C922	1-130-336-00	FILM	0.0068MF	10%	630V
C923	1-107-080-00	MICA	62PF	5%	50V
C951	1-123-332-00	ELECT	47MF	20%	16V

DISCRIMINATOR

CD101	1-404-380-00	DISCRIMINATOR, CERAMIC 5.5MHZ

FILTER

CF003	1-527-822-00	OSCILLATOR, CERAMIC
CF101	1-527-263-00	CERAMIC FILTER (5.5MHZ)

CONNECTOR

CN001	*1-560-891-00	PIN, CONNECTOR 3P
CN002	*1-560-896-00	PIN, CONNECTOR 8P
CN003	*1-560-894-00	PIN, CONNECTOR 6P
CN004	*1-560-900-00	PIN, CONNECTOR 12P
CN501	*1-560-892-00	PIN, CONNECTOR 4P
CN502	*1-560-896-00	PIN, CONNECTOR 8P
CN901	*1-564-030-00	PIN, CONNECTOR 5P
CN902	*1-564-033-00	PIN, CONNECTOR 8P

TRIMMER

CT001	1-404-134-00	TRAP, CERAMIC (5.5MHZ)
CT101	1-409-333-00	TRAP, CERAMIC (6.0MHZ)

DIODE

D003	8-719-911-19	DIODE 1SS119
D004	8-719-911-19	DIODE 1SS119
D005	*8-719-812-33	DIODE TLG123A
D006	8-719-812-31	DIODE TLR123
D007	8-719-812-31	DIODE TLR123
D008	8-719-000-12	DIODE MC931
D009	8-719-812-32	DIODE TLY123
D010	8-719-200-02	DIODE 10E-2

Ref.No	Part No.	Description	Remark
D101	8-719-911-19	DIODE 1SS119	
D301	8-719-000-12	DIODE MC931	
D302	8-719-911-19	DIODE 1SS119	
D505	8-719-911-19	DIODE 1SS119	
D508	8-719-911-19	DIODE 1SS119	
D601	8-719-911-19	DIODE 1SS119	
D602	8-719-911-19	DIODE 1SS119	
D603	8-719-911-19	DIODE 1SS119	
D604	8-719-911-19	DIODE 1SS119	
D605	8-719-911-19	DIODE 1SS119	
D607	8-719-911-19	DIODE 1SS119	
D608	8-719-911-19	DIODE 1SS119	
D609	8-719-911-19	DIODE 1SS119	
D701	8-719-911-19	DIODE 1SS119	
D702	8-719-911-19	DIODE 1SS119	
D703	8-719-100-31	DIODE RD5.1EB3	
D704	8-719-911-19	DIODE 1SS119	
D705	8-719-911-19	DIODE 1SS119	
D706	8-719-911-19	DIODE 1SS119	
D707	8-719-911-19	DIODE 1SS119	
D901	8-719-000-06	DIODE MC921	
D902	8-719-911-19	DIODE 1SS119	

IC

IC001	8-759-276-07	IC TA7607AP
IC005	8-759-602-16	IC M54572L
IC006	8-759-157-40	IC UPC574J
IC007	8-759-603-11	IC M50160-115SP
IC008	8-759-600-66	IC M58653P
IC009	8-759-105-50	IC UPD7507SC-068
IC101	8-759-103-70	IC UPC1391HA
IC601	8-759-205-76	IC TC504013BP
IC901	8-759-101-73	IC UPC1513HA
IC902	8-759-802-11	IC LA7091

COIL

L001	1-408-397-00	MICRO INDUCTOR 1UH
L002	1-408-397-00	MICRO INDUCTOR 1UH
L003	1-408-406-00	MICRO INDUCTOR 5.6UH
L004	1-408-406-00	MICRO INDUCTOR 5.6UH
L005	1-408-408-00	MICRO INDUCTOR 8.2UH
L009	1-408-421-00	MICRO INDUCTOR 100UH
L101	1-408-406-00	MICRO INDUCTOR 5.6UH
L102	1-408-406-00	MICRO INDUCTOR 5.6UH
L103	1-408-413-00	MICRO INDUCTOR 22UH
L104	1-408-412-00	MICRO INDUCTOR 18UH
L106	1-408-421-00	MICRO INDUCTOR 100UH
L501	1-408-421-00	MICRO INDUCTOR 100UH
L502	1-408-417-00	MICRO INDUCTOR 47UH
L701	1-407-168-XX	MICRO INDUCTOR 82UH
L901	1-407-508-00	MICRO INDUCTOR 22MMH
L902	1-407-510-00	MICRO INDUCTOR 27MMH
L903	1-410-120-11	MICRO INDUCTOR 1.2MMH

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description				Remark
		VARIABLE INDUCTOR				
LV901	1-408-713-00	VARIABLE INDUCTOR				
		TRANSISTOR				
Q001	8-729-203-28	TRANSISTOR 2SC2216				
Q005 ⚠	8-729-374-02	TRANSISTOR 2SB740				
Q006	8-729-900-89	TRANSISTOR DTC144ES				
Q007	8-729-245-83	TRANSISTOR 2SC2458				
Q008	8-729-245-83	TRANSISTOR 2SC2458				
Q009	8-729-245-83	TRANSISTOR 2SC2458				
Q011	8-729-204-83	TRANSISTOR 2SA1048				
Q012	8-729-204-83	TRANSISTOR 2SA1048				
Q013	8-729-900-89	TRANSISTOR DTC144ES				
Q015	8-729-900-89	TRANSISTOR DTC144ES				
Q101	8-729-245-83	TRANSISTOR 2SC2458				
Q106	8-729-900-74	TRANSISTOR DTC143TS				
Q201	8-729-204-83	TRANSISTOR 2SA1048				
Q202	8-729-245-83	TRANSISTOR 2SC2458				
Q301	8-729-900-65	TRANSISTOR DTA144ES				
Q501	8-729-245-83	TRANSISTOR 2SC2458				
Q502	8-729-204-83	TRANSISTOR 2SA1048				
Q503	8-729-117-54	TRANSISTOR 2SA1175				
Q504	8-729-245-83	TRANSISTOR 2SC2458				
Q505	8-729-245-83	TRANSISTOR 2SC2458				
Q506	8-729-245-83	TRANSISTOR 2SC2458				
Q507	8-729-245-83	TRANSISTOR 2SC2458				
Q508	8-729-900-80	TRANSISTOR DTC114ES				
Q509	8-729-204-83	TRANSISTOR 2SA1048				
Q601	8-729-900-89	TRANSISTOR DTC144ES				
Q602	8-729-245-83	TRANSISTOR 2SC2458				
Q603	8-729-245-83	TRANSISTOR 2SC2458				
Q604	8-729-900-89	TRANSISTOR DTC144ES				
Q605	8-729-900-89	TRANSISTOR DTC144ES				
Q606	8-729-245-83	TRANSISTOR 2SC2458				
Q607	8-729-245-83	TRANSISTOR 2SC2458				
Q608	8-729-245-83	TRANSISTOR 2SC2458				
Q609	8-729-245-83	TRANSISTOR 2SC2458				
Q610	8-729-900-89	TRANSISTOR DTC144ES				
Q701	8-729-177-32	TRANSISTOR 2SD773				
Q702	8-729-245-83	TRANSISTOR 2SC2458				
Q703	8-729-900-80	TRANSISTOR DTC114ES				
Q704	8-729-204-83	TRANSISTOR 2SA1048				
Q800	8-729-900-89	TRANSISTOR DTC144ES				
Q802	8-729-900-89	TRANSISTOR DTC144ES				
Q901	8-729-900-89	TRANSISTOR DTC144ES				
Q904	8-729-245-83	TRANSISTOR 2SC2458				
Q906	8-729-177-43	TRANSISTOR 2SD774				
Q907	8-729-245-83	TRANSISTOR 2SC2458				
		RESISTOR				
R001	1-249-421-11	CARBON	2.2K	5%	1/6W	
R002	1-247-847-00	CARBON	4.7K	5%	1/6W	
R003	1-247-815-00	CARBON	220	5%	1/6W	
R004	1-247-819-00	CARBON	330	5%	1/6W	
R005	1-247-813-00	CARBON	180	5%	1/6W	
R006	1-247-837-00	CARBON	1.8K	5%	1/6W	
R007	1-249-419-11	CARBON	1.5K	5%	1/6W	
R008	1-247-867-00	CARBON	33K	5%	1/6W	
R009	1-247-879-00	CARBON	100K	5%	1/6W	
R010	1-247-879-00	CARBON	100K	5%	1/6W	
R011	1-247-901-00	CARBON	820K	5%	1/6W	
R012	1-247-831-00	CARBON	1K	5%	1/6W	
R013	1-247-813-00	CARBON	180	5%	1/6W	
R042	1-206-670-00	METAL OXIDE	1.8K	5%	2W	F
R043	1-247-847-00	CARBON	4.7K	5%	1/6W	
R044	1-247-831-00	CARBON	1K	5%	1/6W	
R045	1-247-833-00	CARBON	1.2K	5%	1/6W	
R046	1-249-421-11	CARBON	2.2K	5%	1/6W	
R047	1-249-421-11	CARBON	2.2K	5%	1/6W	
R048	1-247-891-00	CARBON	330K	5%	1/6W	
R049	1-247-863-00	CARBON	22K	5%	1/6W	
R050	1-247-863-00	CARBON	22K	5%	1/6W	
R051	1-247-863-00	CARBON	22K	5%	1/6W	
R052	1-247-863-00	CARBON	22K	5%	1/6W	
R053	1-247-863-00	CARBON	22K	5%	1/6W	
R054	1-247-877-00	CARBON	82K	5%	1/6W	
R055	1-247-851-00	CARBON	6.8K	5%	1/6W	
R056	1-247-843-00	CARBON	3.3K	5%	1/6W	
R058	1-247-867-00	CARBON	33K	5%	1/6W	
R059	1-247-863-00	CARBON	22K	5%	1/6W	
R060	1-247-847-00	CARBON	4.7K	5%	1/6W	
R061	1-247-863-00	CARBON	22K	5%	1/6W	
R062	1-247-867-00	CARBON	33K	5%	1/6W	
R063	1-249-429-11	CARBON	10K	5%	1/6W	
R064	1-249-429-11	CARBON	10K	5%	1/6W	
R065	1-249-429-11	CARBON	10K	5%	1/6W	
R066	1-249-429-11	CARBON	10K	5%	1/6W	
R067	1-247-903-00	CARBON	1M	5%	1/6W	
R068	1-247-831-00	CARBON	1K	5%	1/6W	
R070	1-247-853-00	CARBON	8.2K	5%	1/6W	
R071	1-249-437-11	CARBON	47K	5%	1/6W	
R072	1-249-437-11	CARBON	47K	5%	1/6W	
R073	1-249-437-11	CARBON	47K	5%	1/6W	
R074	1-247-833-00	CARBON	1.2K	5%	1/6W	
R076	1-249-419-11	CARBON	1.5K	5%	1/6W	
R077	1-247-847-00	CARBON	4.7K	5%	1/6W	
R101	1-247-807-00	CARBON	100	5%	1/6W	
R102	1-247-817-00	CARBON	270	5%	1/6W	
R103	1-247-815-00	CARBON	220	5%	1/6W	
R104	1-247-829-00	CARBON	820	5%	1/6W	
R105	1-247-819-00	CARBON	330	5%	1/6W	
R108	1-247-847-00	CARBON	4.7K	5%	1/6W	
R109	1-247-863-00	CARBON	22K.	5%	1/6W	
R110	1-247-831-00	CARBON	1K	5%	1/6W	
R111	1-247-815-00	CARBON	220	5%	1/6W	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R113	1-247-831-00	CARBON	1K	5%	1/6W	
R115	1-249-437-11	CARBON	47K	5%	1/6W	
R116	1-247-891-00	CARBON	330K	5%	1/6W	
R201	1-247-819-00	CARBON	330	5%	1/6W	
R202	1-247-887-00	CARBON	220K	5%	1/6W	
R203	1-247-845-00	CARBON	3.9K	5%	1/6W	
R204	1-247-827-00	CARBON	680	5%	1/6W	
R205	1-247-825-00	CARBON	560	5%	1/6W	
R301	1-249-429-11	CARBON	10K	5%	1/6W	
R302	1-249-429-11	CARBON	10K	5%	1/6W	
R303	1-247-849-00	CARBON	5.6K	5%	1/6W	
R501	1-249-429-11	CARBON	10K	5%	1/6W	
R503	1-247-825-00	CARBON	560	5%	1/6W	
R504	1-249-429-11	CARBON	10K	5%	1/6W	
R505	1-247-847-00	CARBON	4.7K	5%	1/6W	
R507	1-247-833-00	CARBON	1.2K	5%	1/6W	
R508	1-247-831-00	CARBON	1K	5%	1/6W	
R509	1-247-849-00	CARBON	5.6K	5%	1/6W	
R510	1-247-847-00	CARBON	4.7K	5%	1/6W	
R511	1-249-429-11	CARBON	10K	5%	1/6W	
R512	1-247-857-00	CARBON	12K	5%	1/6W	
R513	1-247-831-00	CARBON	1K	5%	1/6W	
R514	1-247-807-00	CARBON	100	5%	1/6W	
R516	1-247-815-00	CARBON	220	5%	1/6W	
R517	1-247-825-00	CARBON	560	5%	1/6W	
R519	1-247-815-00	CARBON	220	5%	1/6W	
R523	1-247-847-00	CARBON	4.7K	5%	1/6W	
R524	1-247-807-00	CARBON	100	5%	1/6W	
R525	1-247-831-00	CARBON	1K	5%	1/6W	
R526	1-247-837-00	CARBON	1.8K	5%	1/6W	
R527	1-247-807-00	CARBON	100	5%	1/6W	
R550	1-247-799-00	CARBON	47	5%	1/6W	
R601	1-249-429-11	CARBON	10K	5%	1/6W	
R602	1-249-429-11	CARBON	10K	5%	1/6W	
R603	1-249-429-11	CARBON	10K	5%	1/6W	
R604	1-249-429-11	CARBON	10K	5%	1/6W	
R605	1-249-429-11	CARBON	10K	5%	1/6W	
R606	1-249-429-11	CARBON	10K	5%	1/6W	
R607	1-249-429-11	CARBON	10K	5%	1/6W	
R608	1-249-429-11	CARBON	10K	5%	1/6W	
R609	1-247-849-00	CARBON	5.6K	5%	1/6W	
R610	1-247-867-00	CARBON	33K	5%	1/6W	
R611	1-247-867-00	CARBON	33K	5%	1/6W	
R612	1-247-843-00	CARBON	3.3K	5%	1/6W	
R613	1-249-429-11	CARBON	10K	5%	1/6W	
R614	1-247-861-00	CARBON	18K	5%	1/6W	
R615	1-247-869-00	CARBON	39K	5%	1/6W	
R616	1-249-421-11	CARBON	2.2K	5%	1/6W	
R617	1-249-437-11	CARBON	47K	5%	1/6W	
R618	1-249-429-11	CARBON	10K	5%	1/6W	
R619	1-247-847-00	CARBON	4.7K	5%	1/6W	
R620	1-249-429-11	CARBON	10K	5%	1/6W	
R622	1-249-429-11	CARBON	10K	5%	1/6W	

Ref.No	Part No.	Description				Remark
R701	1-247-791-00	CARBON	22	5%	1/6W	
R702	1-247-831-00	CARBON	1K	5%	1/6W	
R703	1-247-831-00	CARBON	1K	5%	1/6W	
R704	1-247-831-00	CARBON	1K	5%	1/6W	
R705	1-247-831-00	CARBON	1K	5%	1/6W	
R706	1-249-429-11	CARBON	10K	5%	1/6W	
R707	1-249-429-11	CARBON	10K	5%	1/6W	
R800	1-247-847-00	CARBON	4.7K	5%	1/6W	
R801	1-247-847-00	CARBON	4.7K	5%	1/6W	
R802	**⚠.1-212-853-51**	**FUSIBLE**	**6.8**	**5%**	**1/4W**	**F**
R805	1-249-429-11	CARBON	10K	5%	1/6W	
R806	1-247-843-00	CARBON	3.3K	5%	1/6W	
R820	1-247-869-00	CARBON	39K	5%	1/6W	
R821	1-247-861-00	CARBON	18K	5%	1/6W	
R901	1-249-429-11	CARBON	10K	5%	1/6W	
R902	1-247-783-00	CARBON	10	5%	1/6W	
R903	1-247-859-00	CARBON	15K	5%	1/6W	
R904	1-247-831-00	CARBON	1K	5%	1/6W	
R905	1-247-821-00	CARBON	390	5%	1/6W	
R906	1-247-861-00	CARBON	18K	5%	1/6W	
R907	1-247-885-00	CARBON	180K	5%	1/6W	
R908	1-249-429-11	CARBON	10K	5%	1/6W	
R909	1-247-867-00	CARBON	33K	5%	1/6W	
R912	1-247-899-00	CARBON	680K	5%	1/6W	
R913	1-247-867-00	CARBON	33K	5%	1/6W	
R914	1-247-829-00	CARBON	820	5%	1/6W	
R915	1-249-429-11	CARBON	10K	5%	1/6W	
R916	1-247-831-00	CARBON	1K	5%	1/6W	
R917	1-247-807-00	CARBON	100	5%	1/6W	
R919	**⚠.1-212-853-51**	**FUSIBLE**	**6.8**	**5%**	**1/4W**	**F**
R921	1-247-831-00	CARBON	1K	5%	1/6W	
R922	1-247-859-00	CARBON	15K	5%	1/6W	
R923	1-247-077-00	CARBON	3.3	5%	1/4W	
R925	1-249-437-11	CARBON	47K	5%	1/6W	
R926	1-247-853-00	CARBON	8.2K	5%	1/6W	
R950	1-247-857-00	CARBON	12K	5%	1/6W	
R951	1-247-867-00	CARBON	33K	5%	1/6W	

VARIABLE RESISTOR

RV001	1-228-993-00	RES, ADJ, CARBON 4.7K
RV901	1-228-994-00	RES, ADJ, CARBON 10K
RV902	1-228-998-00	RES, ADJ, METAL GLAZE 220K

RELAY

RY901	1-515-418-00	RELAY

SWITCH

S001	1-553-997-00	SWITCH, KEY BOARD
S002	1-553-997-00	SWITCH, KEY BOARD
S003	1-553-997-00	SWITCH, KEY BOARD
S004	1-553-997-00	SWITCH, KEY BOARD
S005	1-553-997-00	SWITCH, KEY BOARD

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

TA-37

Ref.No	Part No.	Description	Remark
S006	1-553-997-00	SWITCH, KEY BOARD	
S007	1-553-997-00	SWITCH, KEY BOARD	
		SAWF	
SAWF101	1-404-563-11	SAWF	
		TRANSFORMER	
T001	1-404-068-00	COIL, VIF	
T002	1-404-068-00	COIL, VIF	
T003	1-404-427-00	VIFT	
T004	1-404-427-00	VIFT	
T101	1-404-428-00	VIFT	
T701	1-446-571-00	TRANSFORMER, CONVERTOR	
T901	1-433-275-00	TRANSFORMER, BIAS OSCILLATOR	
		TUNER	
TU001 ⚠	1-463-584-21	TUNER, ET (BT-881AD)	

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The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
	*1-616-601-11	LM-17 BOARD ************	
		CAPACITOR	
C1	1-161-057-00	CERAMIC 0.033MF 20%	25V
C2	1-161-057-00	CERAMIC 0.033MF 20%	25V
		COIL	
L1	1-408-120-00	MICRO INDUCTOR 18UH	
L2	1-408-120-00	MICRO INDUCTOR 18UH	

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Ref.No	Part No.	Description	Remark
	*1-617-041-11	PW-15 BOARD ************	
	*3-697-646-01	HOLDER (PW), LED	
		DIODE	
D101	*8-719-812-33	DIODE TLG123A	
		RESISTOR	
R101	1-246-465-00	CARBON 470 5%	1/4W
		VARIABLE RESISTOR	
RV101	1-230-856-11	RES, VAR, CARBON 50K/50K	
		SWITCH	
SW101	1-554-174-00	SWITCH, KEY BOARD	

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Ref.No	Part No.	Description	Remark
	*1-616-598-11	US-1 BOARD ***********	

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Ref.No	Part No.	Description	Remark
	*1-616-600-11	LS-11 BOARD ************	
		CAPACITOR	
C001	1-161-057-00	CERAMIC 0.033MF 20%	25V
C002	1-161-057-00	CERAMIC 0.033MF 20%	25V
		COIL	
L001	1-408-120-00	MICRO INDUCTOR 18UH	
L002	1-408-120-00	MICRO INDUCTOR 18UH	

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Ref.No	Part No.	Description	Remark
	*A-6724-466-A	FL-8 BOARD, COMPLETE **********************	
	*3-697-607-01	HOLDER (SU), LED	
	*3-697-648-01	HOLDER, INDICATION TUBE	
		CAPACITOR	
C001	1-123-356-00	ELECT 10MF 20%	16V
		CONNECTOR	
CN001	*1-564-016-00	PIN, CONNECTOR 6P	
CN002	*1-564-001-11	PIN, CONNECTOR 2P	
		COMPOSITION CIRCUIT BLOCK	
CP001	1-232-957-11	COMPOSITION CIRCUIT BLOCK	
CP002	1-232-816-11	COMPOSITION CIRCUIT BLOCK	
		DIODE	
D001	8-719-906-49	DIODE.LT-9230N	
D002	*8-719-812-33	DIODE TLG123A	
		INDICATOR TUBE	
FL001	1-519-366-11	INDICATOR TUBE, FLUORESCENT	
		IC	
IC001	8-741-131-70	IC BX-1317	
		RESISTOR	
R001	1-249-437-11	CARBON 47K 5%	1/6W
R003	1-247-801-00	CARBON 56 5%	1/6W
R004	1-247-813-00	CARBON 180 5%	1/6W
R005	1-247-813-00	CARBON 180 5%	1/6W
R006	1-249-421-11	CARBON 2.2K 5%	1/6W
R007	1-249-421-11	CARBON 2.2K 5%	1/6W
		VARIABLE RESISTOR	
RV001	1-230-986-11	RES, VAR, SLIDE 20K/20K	
RV002	1-228-994-00	RES, ADJ, CARBON 10K	
RV003	1-228-994-00	RES, ADJ, CARBON 10K	
		SWITCH	
S001	1-554-174-00	SWITCH, KEY BOARD	
S002	1-554-174-00	SWITCH, KEY BOARD	
S003	1-554-174-00	SWITCH, KEY BOARD	
S004	1-554-174-00	SWITCH, KEY BOARD	
S005	1-554-174-00	SWITCH, KEY BOARD	
S006	1-554-174-00	SWITCH, KEY BOARD	

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Ref.No	Part No.	Description	Remark
	*A-6724-467-A	FL-9 BOARD, COMPLETE *********************	
		CAPACITOR	
C102	1-123-617-00	ELECT 10MF 20%	16V
C103	1-123-617-00	ELECT 10MF 20%	16V
C104	1-102-508-00	CERAMIC 10PF 0.5PF	50V

When indicating parts by reference number, please include the board name.

FL-9 FR-20

Ref.No	Part No.	Description	Remark
C105	1-161-025-00	CERAMIC 0.1MF 10%	25V
		CONNECTOR	
CN101	*1-564-003-00	PIN, CONNECTOR 4P	
CN102	*1-564-011-11	PIN, CONNECTOR 12P	
		COMPOSITION CIRCUIT BLOCK	
CP101	1-232-967-11	COMPOSITION CIRCUIT BLOCK	
		TRIMMER	
CV101	1-141-022-11	CAP, TRIMMER, CERAMIC	
		DIODE	
D102	8-719-100-54	DIODE RD9.1E-B2	
		IC	
IC101	8-752-800-26	IC CXP5016-104S	
IC102	8-759-913-41	IC S-8054ALB	
		TRANSISTOR	
Q102	8-729-900-80	TRANSISTOR DTC114ES	
Q103	8-729-900-80	TRANSISTOR DTC114ES	
		RESISTOR	
R104	1-249-429-11	CARBON 10K 5% 1/6W	
R107	1-247-843-00	CARBON 3.3K 5% 1/6W	
R109	1-247-879-00	CARBON 100K 5% 1/6W	
		CRYSTAL	
X101	1-567-519-11	VIBRATOR, CRYSTAL (4.194304MHz)	

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*A-6725-469-A FR-20 BOARD, COMPLETE
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Ref.No	Part No.	Description	Remark
	*3-684-005-01	HOLDER (S), LED	
	*3-697-663-01	HOLDER (FR), LED	
		CAPACITOR	
C001	1-161-025-00	CERAMIC 0.1MF 10%	25V
C002	1-161-025-00	CERAMIC 0.1MF 10%	25V
C003	1-102-518-00	CERAMIC 33PF 5%	50V
C004	1-102-518-00	CERAMIC 33PF 5%	50V
		CONNECTOR	
CN004	*1-564-016-00	PIN, CONNECTOR 6P	
CN005	*1-564-013-00	PIN, CONNECTOR 3P	
CN006	*1-564-013-00	PIN, CONNECTOR 3P	
		DIODE	
D001	8-719-911-19	DIODE 1SS119	
D002	8-719-911-19	DIODE 1SS119	
D003	8-719-911-19	DIODE 1SS119	
D004	8-719-911-19	DIODE 1SS119	
D005	8-719-911-19	DIODE 1SS119	
D006	8-719-911-19	DIODE 1SS119	
D007	8-719-911-19	DIODE 1SS119	
D008	*8-719-812-33	DIODE TLG123A	
D009	8-719-812-31	DIODE TLR123	
D010	8-719-812-31	DIODE TLR123	
D011	8-719-812-31	DIODE TLR123	
D012	8-719-812-30	DIODE TLO123	
D013	8-719-812-32	DIODE TLY123	
D014	8-719-812-32	DIODE TLY123	
D015	*8-719-812-33	DIODE TLG123A	
D016	*8-719-812-33	DIODE TLG123A	
D017	*8-719-812-33	DIODE TLG123A	
D018	*8-719-812-33	DIODE TLG123A	
D019	*8-719-812-33	DIODE TLG123A	
D020	*8-719-812-33	DIODE TLG123A	
D021	*8-719-812-33	DIODE TLG123A	
D022	*8-719-812-33	DIODE TLG123A	
D023	*8-719-812-33	DIODE TLG123A	
D024	*8-719-812-33	DIODE TLG123A	
D025	8-719-911-19	DIODE 1SS119	
D026	8-719-911-19	DIODE 1SS119	
D027	8-719-911-19	DIODE 1SS119	
D028	8-719-911-19	DIODE 1SS119	
D029	8-719-911-19	DIODE 1SS119	
D030	8-719-911-19	DIODE 1SS119	
D031	8-719-911-19	DIODE 1SS119	
D032	8-719-911-19	DIODE 1SS119	
D033	8-719-911-19	DIODE 1SS119	
D034	8-719-911-19	DIODE 1SS119	
D035	8-719-911-19	DIODE 1SS119	
D036	8-719-911-19	DIODE 1SS119	
		IC	
IC001	8-759-105-54	IC UPD7508HG-536-22	
IC002	8-759-901-38	IC SN74LS138N	
		TRANSISTOR	
Q001	8-729-245-83	TRANSISTOR 2SC2458	
Q002	8-729-245-83	TRANSISTOR 2SC2458	
Q003	8-729-902-11	TRANSISTOR 2SC2021	
Q004	8-729-902-11	TRANSISTOR 2SC2021	
Q005	8-729-245-83	TRANSISTOR 2SC2458	
Q006	8-729-245-83	TRANSISTOR 2SC2458	
Q007	8-729-245-83	TRANSISTOR 2SC2458	
Q008	8-729-245-83	TRANSISTOR 2SC2458	
Q009	8-729-117-54	TRANSISTOR 2SA1175-F	
Q104	8-729-900-61	TRANSISTOR DTA114ES	

When indicating parts by reference number, please include the board name.

RESISTOR

Ref.No	Part No.	Description				Remark
R004	1-249-437-11	CARBON	47K	5%	1/6W	
R005	1-247-873-00	CARBON	56K	5%	1/6W	
R006	1-249-437-11	CARBON	47K	5%	1/6W	
R007	1-247-873-00	CARBON	56K	5%	1/6W	
R008	1-247-843-00	CARBON	3.3K	5%	1/6W	
R009	1-247-879-00	CARBON	100K	5%	1/6W	
R018	1-247-879-00	CARBON	100K	5%	1/6W	
R019	1-247-879-00	CARBON	100K	5%	1/6W	
R020	1-247-879-00	CARBON	100K	5%	1/6W	
R021	1-247-879-00	CARBON	100K	5%	1/6W	
R022	1-247-879-00	CARBON	100K	5%	1/6W	
R023	1-247-879-00	CARBON	100K	5%	1/6W	
R024	1-247-879-00	CARBON	100K	5%	1/6W	
R025	1-247-805-00	CARBON	82	5%	1/6W	
R026	1-247-805-00	CARBON	82	5%	1/6W	
R027	1-247-805-00	CARBON	82	5%	1/6W	
R028	1-247-805-00	CARBON	82	5%	1/6W	
R029	1-247-805-00	CARBON	82	5%	1/6W	
R030	1-247-805-00	CARBON	82	5%	1/6W	
R031	1-247-805-00	CARBON	82	5%	1/6W	
R032	1-247-809-00	CARBON	120	5%	1/6W	
R033	1-247-825-00	CARBON	560	5%	1/6W	
R034	1-247-825-00	CARBON	560	5%	1/6W	
R035	1-249-421-11	CARBON	2.2K	5%	1/6W	
R036	1-247-859-00	CARBON	15K	5%	1/6W	
R037	1-247-843-00	CARBON	3.3K	5%	1/6W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV001	1-230-431-11	RES, VAR, CARBON 100K	
RV002	1-230-430-11	RES, VAR, CARBON 10K	
RV003	1-230-430-11	RES, VAR, CARBON 10K	

SWITCH

Ref.No	Part No.	Description	Remark
S001	1-553-716-00	SWITCH, SLIDE	
S002	1-553-754-00	SWITCH, SLIDE	
S003	1-553-716-00	SWITCH, SLIDE	
S004	1-553-754-00	SWITCH, SLIDE	
S005	1-553-716-00	SWITCH, SLIDE	
S006	1-553-754-00	SWITCH, SLIDE	
S007	1-553-716-00	SWITCH, SLIDE	
S008	1-553-716-00	SWITCH, SLIDE	
S009	1-553-716-00	SWITCH, SLIDE	
S010	1-553-754-00	SWITCH, SLIDE	
S011	1-554-174-00	SWITCH, KEY BOARD	
S012	1-554-174-00	SWITCH, KEY BOARD	
S013	1-554-174-00	SWITCH, KEY BOARD	
S014	1-554-174-00	SWITCH, KEY BOARD	
S015	1-554-174-00	SWITCH, KEY BOARD	
S016	1-554-174-00	SWITCH, KEY BOARD	
S017	1-554-174-00	SWITCH, KEY BOARD	
S018	1-554-174-00	SWITCH, KEY BOARD	
S019	1-554-174-00	SWITCH, KEY BOARD	
S020	1-554-174-00	SWITCH, KEY BOARD	
S021	1-554-174-00	SWITCH, KEY BOARD	
S022	1-554-174-00	SWITCH, KEY BOARD	
S023	1-554-174-00	SWITCH, KEY BOARD	
S024	1-554-174-00	SWITCH, KEY BOARD	
S025	1-554-174-00	SWITCH, KEY BOARD	
S026	1-554-174-00	SWITCH, KEY BOARD	
S027	1-554-174-00	SWITCH, KEY BOARD	
S028	1-554-174-00	SWITCH, KEY BOARD	
S029	1-554-174-00	SWITCH, KEY BOARD	
S030	1-554-174-00	SWITCH, KEY BOARD	
S031	1-554-174-00	SWITCH, KEY BOARD	
S032	1-554-174-00	SWITCH, KEY BOARD	
S033	1-554-174-00	SWITCH, KEY BOARD	
S034	1-554-174-00	SWITCH, KEY BOARD	
S035	1-554-174-00	SWITCH, KEY BOARD	
S037	1-554-174-00	SWITCH, KEY BOARD	
S038	1-554-174-00	SWITCH, KEY BOARD	

CRYSTAL

Ref.No	Part No.	Description	Remark
X001	1-527-822-00	OSCILLATOR, CERAMIC (4MHz)	

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*1-616-599-11 RD-17 BOARD

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Ref.No	Part No.	Description	Remark
	*3-696-392-01	HOLDER, PI	

DIODE

Ref.No	Part No.	Description	Remark
PC001	8-719-751-42	DIODE NJL5141E	
PC002	8-719-751-42	DIODE NJL5141E	

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*1-617-042-11 HP-18 BOARD

****

JACK

Ref.No	Part No.	Description	Remark
J001	1-507-796-21	JACK	

****

*1-617-043-11 MC-10 BOARD

****

JACK

Ref.No	Part No.	Description	Remark
J901	1-507-678-00	JACK	

RESISTOR

Ref.No	Part No.	Description				Remark
R102	1-247-831-00	CARBON	1K	5%	1/6W	
R103	1-247-879-00	CARBON	100K	5%	1/6W	

****

*1-617-034-11 PJ-3 BOARD

****

Ref.No	Part No.	Description	Remark
	1-507-907-11	JACK, PIN 4P	

****

*1-616-602-11 OC-1 BOARD

****

MICRO SWITCH

Ref.No	Part No.	Description	Remark
MS-1	1-570-424-11	SWITCH, MICRO	
MS-2	1-570-424-11	SWITCH, MICRO	

****

When indicating parts by reference number, please include the board name.

POWER BLOCK

Ref.No.	Part No.	Description			Remark
	⚠1-413-229-11	REGULATOR, SWITCHING (SR-21E)			

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M BOARD, COMPLETE
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Ref.No.	Part No.	Description
	⚠2-431-533-01	COVER, CAPACITOR
	⚠*2-431-517-01	PLATE, HOLDER, TRANSISTOR
	⚠2-431-531-01	RUBBER, STB-SR21

CAPACITOR

Ref.No.	Part No.	Description			Remark
C602	⚠1-161-742-12	CERAMIC	0.0022MF	400V	
C603	⚠1-161-742-12	CERAMIC	0.0022MF	400V	
C604	⚠1-161-742-12	CERAMIC	0.0022MF	400V	
C605	⚠1-161-742-12	CERAMIC	0.0022MF	400V	
C606	⚠1-136-416-11	FILM	0.22MF	250V	
C607	⚠1-161-743-12	CERAMIC	0.0047MF	400V	
C608	⚠1-161-743-12	CERAMIC	0.0047MF	400V	
C609	1-125-352-00	ELECT	180MF	400V	
C611	1-124-023-00	ELECT	4.7MF	350V	
C612	1-124-162-00	ELECT	47MF	10V	
C613	1-124-162-00	ELECT	47MF	10V	
C621	1-106-347-00	FILM	0.0015MF	200V	
C622	1-106-347-00	FILM	0.0015MF	200V	
C623	1-161-910-00	CERAMIC	390PF	500V	
C624	1-161-910-00	CERAMIC	390PF	500V	
C625	1-161-915-00	CERAMIC	0.001MF	500V	
C626	1-136-153-00	FILM	0.01MF	50V	
C627	1-136-157-00	FILM	0.022MF	50V	
C628	1-123-385-00	ELECT	22MF	100V	
C630	1-124-597-11	ELECT	2200MF	16V	
C631	1-136-157-00	FILM	0.022MF	50V	

CONNECTOR

Ref.No.	Part No.	Description
CN620	1-508-847-00	PIN, CONNECTOR 4P

DIODE

Ref.No.	Part No.	Description
D601	8-719-300-63	DIODE LB156
D621	8-719-908-00	DIODE ESAC33-02C5
D622	8-719-900-93	DIODE V09C
D623	8-719-815-85	DIODE 1S1585
D624	8-719-100-61	DIODE RD11EB2
D625	8-719-100-44	DIODE RD7.5EB2
D626	8-719-100-50	DIODE RD9.1EB1
D641	8-719-900-93	DIODE V09C

FERRITE BEAD

Ref.No.	Part No.	Description
FB621	1-543-060-00	BEAD, FERRITE
FB622	1-543-060-00	BEAD, FERRITE
FB623	1-543-060-00	BEAD, FERRITE
FB624	1-543-060-00	BEAD, FERRITE

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

COIL

Ref.No.	Part. No.	Description
L601	⚠1-421-824-11	TRANSFORMER, LINE FILTER 20MH
L621	1-421-791-11	COIL, CHOKE 2MH

TRANSISTOR

Ref.No.	Part. No.	Description
Q601	8-729-104-66	TRANSISTOR 2SC3158
Q602	8-729-104-66	TRANSISTOR 2SC3158
Q603	8-729-100-13	TRANSISTOR 2SC2001
Q604	8-729-100-13	TRANSISTOR 2SC2001
Q621	8-729-306-72	TRANSISTOR 2SD667A
Q622	8-729-245-83	TRANSISTOR 2SC2458

RESISTOR

Ref.No.	Part. No.	Description			Remark
R602	1-205-783-11	WIRE WOUND	2.2	5W	F
R603	1-246-528-00	CARBON	200K	1/4W	
R604	1-246-528-00	CARBON	200K	1/4W	
R605	1-246-528-00	CARBON	200K	1/4W	
R606	1-246-528-00	CARBON	200K	1/4W	
R607	⚠1-212-946-11	FUSIBLE	3.3	1/2W	F
R608	⚠1-212-946-11	FUSIBLE	3.3	1/2W	F
R609	1-247-700-11	CARBON	100	1/4W	
R610	1-247-700-11	CARBON	100	1/4W	
R611	⚠1-217-418-21	FUSIBLE	0.47	1/2W	F
R621	1-206-475-11	METAL OXIDE	33	2W	F
R622	1-535-363-00	SHUNT	0.02	2W	
R623	1-247-143-00	CARBON	3.3K	1/4W	
R624	1-247-713-11	CARBON	1K	1/4W	
R625	1-247-700-11	CARBON	100	1/4W	
R626	1-213-157-11	METAL OXIDE	15K	1W	F
R627	1-247-713-11	CARBON	1K	1/4W	
R628	1-247-717-11	CARBON	2.2K	1/4W	
R629	1-249-455-11	CARBON	4.7	1/4W	
R630	1-247-702-11	CARBON	150	1/4W	

TRANSFORMER

Ref.No.	Part. No.	Description
T601	⚠1-447-677-41	TRANSFORMER, CONVERTER
T602	⚠1-437-120-11	TRANSFORMER, DRIVE

CN BOARD, COMPLETE
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CAPACITOR

Ref.No.	Part. No.	Description			Remark
C636	1-123-330-00	ELECT	22MF	25V	
C637	1-123-323-00	ELECT	470MF	16V	
C638	1-124-555-00	ELECT	1000MF	16V	
C639	1-123-323-00	ELECT	470MF	16V	
C641	1-123-333-00	ELECT	100MF	25V	
C642	1-123-333-00	ELECT	100MF	25V	
C643	1-123-357-00	ELECT	22MF	50V	
C644	1-123-357-00	ELECT	22MF	50V	
C645	1-123-356-00	ELECT	10MF	50V	
C646	1-123-357-00	ELECT	22MF	50V	

POWER BLOCK

Ref.No.	Part No.	Description			Remark
		CONNECTOR			
CN1	*1-564-163-00	PIN, CONNECTOR 6P			
CN001	*1-560-894-00	PIN, CONNECTOR 6P			
CN002	*1-560-893-00	PIN, CONNECTOR 5P			
CN003	*1-560-891-00	PIN, CONNECTOR 3P			
CN004	*1-560-892-00	PIN, CONNECTOR 4P			
CN005	*1-560-896-00	PIN, CONNECTOR 8P			
		DIODE			
D630	8-719-101-04	DIODE RD33EB2			
D631	8-719-911-19	DIODE 1SS119			
D636	8-719-911-19	DIODE 1SS119			
D637	8-719-911-19	DIODE 1SS119			
D638	8-719-100-40	DIODE RD6.8EB1			
D639	8-719-911-19	DIODE 1SS119			
D640	8-719-100-38	DIODE RD6.2EB2			
		COIL			
L622	1-421-421-00	COIL, CHOKE 100μH			
L623	1-421-421-00	COIL, CHOKE 100μH			
L624	1-408-933-00	COIL, CHOKE 10μH			
		TRANSISTOR			
Q623	8-729-245-83	TRANSISTOR 2SC2458-GR			
Q624	8-729-204-83	TRANSISTOR 2SA1048-GR			
Q626	8-729-188-23	TRANSISTOR 2SD882			
Q627	8-729-188-23	TRANSISTOR 2SD882			
Q628	8-729-245-83	TRANSISTOR 2SC2458-GR			
		RESISTOR			
R640	1-247-159-00	CARBON	15K	1/4W	
R641	1-247-147-00	CARBON	4.7K	1/4W	
R642	1-247-147-00	CARBON	4.7K	1/4W	
R643	1-247-141-00	CARBON	2.7K	1/4W	
R644	1-247-143-00	CARBON	3.3K	1/4W	
R645	1-247-134-00	CARBON	1.3K	1/4W	
R646	1-247-155-00	CARBON	10K	1/4W	
R647	1-247-147-00	CARBON	4.7K	1/4W	
R650	1-205-724-11	CEMENT-COATED	22	5W	F
R651	1-247-129-00	CARBON	820	1/4W	
R652	1-205-789-11	CEMENT-COATED	1.8	5W	F
R653 ⚠	1-247-920-61	CARBON	150	1/2W	F
R654	1-247-133-00	CARBON	1.2K	1/4W	
R655	1-247-141-00	CARBON	2.7K	1/4W	
R6					
		VARIABLE RESISTOR			
RV621	1-228-991-00	RES, ADJ, METAL GLAZE 2.2K			
		RELAY			
RY621	1-515-462-00	RELAY			

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Ref.No	Part No.	Description			Remark
	*1-616-113-11	C BOARD *******			
		CAPACITOR			
C1	1-123-333-00	ELECT	100MF	25V	
C2	1-130-150-00	FILM	0.0056MF	50V	
C3	1-136-159-00	FILM	0.033MF	50V	
C4	1-136-145-00	FILM	0.0022MF	50V	
C5	1-123-318-00	ELECT	33MF	16V	
		DIODE			
D1	8-719-200-02	DIODE 10E-2			
D2	8-719-100-67	DIODE RD13EB1			
		IC			
IC1	8-759-937-59	IC MB-3759			
		RESISTOR			
R1	1-247-825-00	CARBON	560	1/6W	
R2	1-247-867-00	CARBON	33K	1/6W	
R3	1-247-843-00	CARBON	3.3K	1/6W	
R4	1-247-831-00	CARBON	1K	1/6W	
R5	1-247-849-00	CARBON	5.6K	1/6W	
R6	1-249-421-11	CARBON	2.2K	1/6W	
R7	1-247-841-00	CARBON	2.7K	1/6W	
R8	1-247-836-00	CARBON	1.6K	1/6W (STANDARD)	
	1-249-419-11	CARBON	1.5K	1/6W (ADJUST)	
	1-247-837-00	CARBON	1.8K	1/6W (ADJUST)	
R9	1-247-861-00	CARBON	18K	1/6W	
R10	1-247-700-11	CARBON	100	1/4W	
		VARIABLE RESISTOR			
RV1	1-228-141-00	RES, ADJ, METAL GLAZE 500			

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	*1-616-114-11	D BOARD *******			
		CAPACITOR			
C21	1-136-150-00	FILM	0.0056MF	50V	
C22	1-123-356-00	ELECT	10MF	50V	
C23	1-161-915-00	CERAMIC	0.001MF	500V	
C24	1-123-333-00	ELECT	100MF	25V	
C25	1-136-165-00	FILM	0.1MF	50V	
C26	1-136-165-00	FILM	0.1MF	50V	
C27	1-123-357-00	ELECT	22MF	50V	
C28	1-123-357-00	ELECT	22MF	50V	
		CONNECTOR			
CN21	1-564-163-00	PIN, CONNECTOR 6P			
		DIODE			
D21	8-719-815-85	DIODE 1S1585			
D22	8-719-815-85	DIODE 1S1585			
D23	8-719-815-85	DIODE 1S1585			

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

POWER BLOCK

Ref.No.	Part No.	Description	Remark
		IC	
IC21	8-759-937-59	IC MB3759	
		COIL	
L21	1-421-550-00	COIL, CHOKE 66μH	
L22	1-421-421-00	COIL, CHOKE 100μH	
L23	1-408-421-00	MICRO INDUCTOR 100μH	
L24	1-408-421-00	MICRO INDUCTOR 100μH	
L25	1-408-427-00	MICRO INDUCTOR 330μH	
L26	1-408-427-00	MICRO INDUCTOR 330μH	
		IC LINK	
PS21	⚠.1-532-679-11	LINK, IC	
		TRANSISTOR	
Q21	8-729-177-43	TRANSISTOR 2SD774	
Q22	8-729-177-43	TRANSISTOR 2SD774	
		RESISTOR	
R21	⚠.1-247-913-61	CARBON 1K 1/4W	F
R22	1-247-807-00	CARBON 100 1/6W	
R23	1-247-807-00	CARBON 100 1/6W	
R24	1-247-837-00	CARBON 1.8K 1/6W (STANDARD)	
	1-249-419-11	CARBON 1.5K 1/6W (ADJUST)	
	1-249-421-11	CARBON 2.2K 1/6W (ADJUST)	
R25	1-247-859-00	CARBON 15K 1/6W	
R26	1-247-869-00	CARBON 39K 1/6W	
R27	1-247-811-00	CARBON 150 1/6W	
R28	1-247-887-00	CARBON 220K 1/6W	
R29	1-247-831-00	CARBON 1K 1/6W	
		VARIABLE RESISTOR	
RV21	1-228-644-00	RES, ADJ, METAL GLAZE 1K	
		TRANSFORMER	
T21	1-448-269-11	TRANSFORMER, DC-DC CONVERTER	

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	⚠.*1-616-498-11	F BOARD *******	
	⚠.1-533-170-11	HOLDER, FUSE	
	⚠.*1-535-443-11	TERMINAL, PIN, AC CORD	
		CAPACITOR	
C601	⚠.1-136-416-11	FILM 0.22MF 250V	
		FUSE	
F601	⚠.1-532-237-11	FUSE, TIME LAG, T3.15A 250V	
		RESISTOR	
R601	⚠.1-214-947-21	METAL 2.7M 1/2W	

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The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
		MISCELLANEOUS *************	
	⚠ 1-413-229-11	REGULATOR, SWITCHING (SR-21E)	
	⚠.1-464-481-11	BOOSTER MIXER, RF MODULATOR (E MODEL)	
	⚠.1-464-479-11	BOOSTER MIXER, RF MODULATOR (ES MODEL)	
	1-464-526-12	T COIL SENSOR	
	1-464-527-13	S COIL SENSOR	
	*1-555-110-00	CABLE, PIN	
	8-825-508-10	HEAD, FE	
M902	8-838-096-01	MOTOR, DC (BHF-1914A) (CAPSTAN MOTOR)	
M904	X-3696-314-1	MOTOR ASSY, L (LOADING MOTOR)	
M905	X-3696-306-1	MOTOR ASSY, DC (SKATE MOTOR)	
S901	1-554-839-11	SWITCH, LEAF (2 GANG)	
S902	1-570-394-21	SWITCH, ROTARY (ROTARY ENCODER)	

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ACCESSORIES AND PACKING MATERIALS
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Part No.	Description	Remark
A-6765-943-A	COMMANDER ASSY (RMT-223)	
1-551-513-00	CORD ASSY, COAXIAL	
*3-677-503-00	SHEET, PROTECTION	
*3-681-287-01	LID, ACCESSORY CASE	
3-694-484-01	DRIVER, VOLUME	
*3-697-649-01	CASE, ACCESSORY	
*3-697-650-01	CUSHION (UPPER)	
*3-697-651-01	CUSHION (LOWER)	
*3-697-684-01	INDIVIDUAL CARTON	
3-760-837-11	MANUAL, INSTRUCTION	
3-760-837-41	MANUAL, INSTRUCTION (ES MODEL)	
3-760-837-51	MANUAL, INSTRUCTION	

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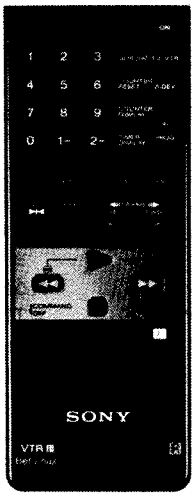
RMT-223

SERVICE MANUAL



SPECIFICATIONS

Remote Commander RMT-223

Remote control system	
	Infrared control
Power requirements	
	3 V DC, 2 IEC designation R6 batteries (size AA)
Dimensions	Approx. 66 × 20 × 175 mm (w/h/d) (2 1/2 × 3/4 × 7 inches) incl. projecting parts and controls
Weight	Approx. 165 g (5.8 oz) incl. batteries

REMOTE COMMANDER

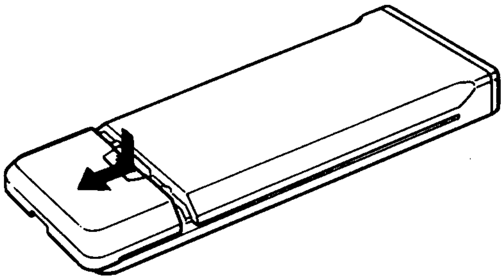
SONY®

1. REMOTE CONTROL OPERATION

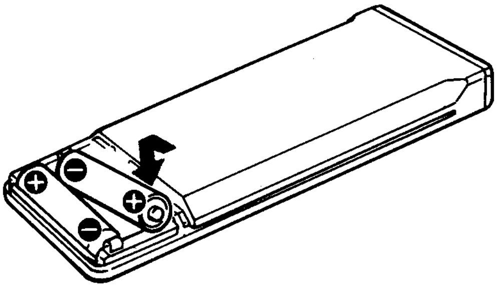
You can control almost all the functions of this video cassette recorder from your armchair using the supplied Remote Commander.

BATTERY INSERTION

1 Open the lid.



2 Insert two IEC designation R6 batteries with correct polarity.



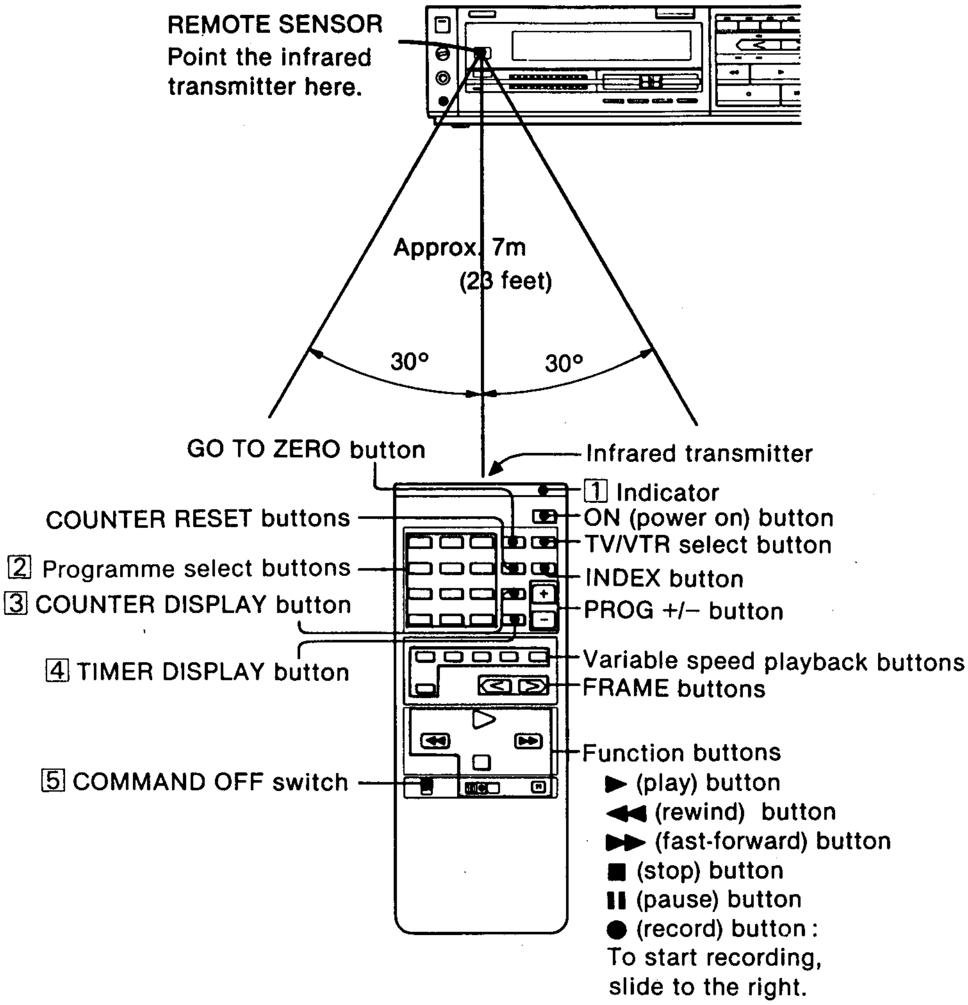
3 Close the lid firmly.

Battery life
In normal operation, batteries will last for about six months. If the range of the Remote Commander becomes noticeably short, replace the batteries with new ones. When the batteries are exhausted, the remote function indicator on the Commander will not light when the buttons on the Commander are pressed.

If the Commander is not to be used for a long period of time, remove the batteries to avoid possible damage from battery leakage.

Notes
- There should be no obstacles between the Commander and the REMOTE SENSOR of the recorder.
- The shorter the distance between the Commander and the recorder, the wider the angle within which the recorder can be controlled.
- The Remote Commander does not function when equipment connected to the CONTROL S jack on the rear is in operation.

OPERATION


REMOTE SENSOR
Point the infrared transmitter here.
Approx. 7m
(23 feet)
30°
30°
GO TO ZERO button
Infrared transmitter
COUNTER RESET buttons
[2] Programme select buttons
[3] COUNTER DISPLAY button
[4] TIMER DISPLAY button
[5] COMMAND OFF switch
[1] Indicator
ON (power on) button
TV/VTR select button
INDEX button
PROG +/– button
Variable speed playback buttons
FRAME buttons
Function buttons
▶ (play) button
◀◀ (rewind) button
▶▶ (fast-forward) button
■ (stop) button
❚❚ (pause) button
● (record) button:
To start recording, slide to the right.

[1] Indicator
Lights when any of the buttons on the Commander is pressed.

[2] Programme select buttons
Select the programme position directly.
For programmes 1 through 9, press the corresponding single-digit button. For programmes 10 through 29, press " 1- " or " 2- " for the tens-digit and then the corresponding single-digit button. For programme 30, press " 0 ".

[3] COUNTER DISPLAY button
To turn off the time counter displayed on the screen, press this button. To turn it on again, press the button again.

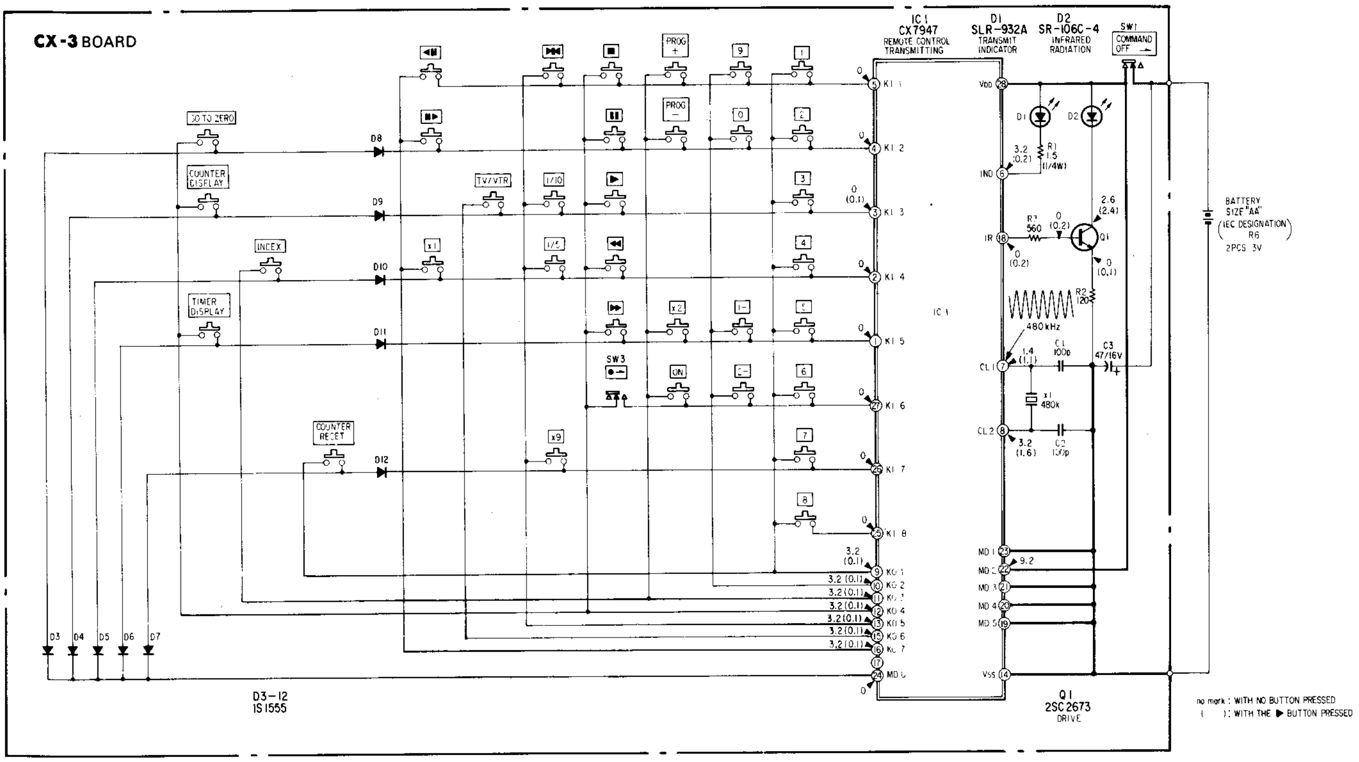
[4] TIMER DISPLAY button
To display the timer settings on the screen, press this button. To turn them off, press the button again.

[5] COMMAND OFF switch
Set to the upper position to turn on the Commander. Set to OFF when the Commander is not in use.

The other buttons have the same functions as the buttons with the same name on the recorder.

Note
Auto play cannot be activated by the Remote Commander.

2. SCHEMATIC DIAGRAM


1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
CX-3 BOARD
GO TO ZERO
COUNTER DISPLAY
INDEX
TIMER DISPLAY
COUNTER RESET
TV/VTR
1/10
1/5
x1
x2
x9
PROG +
PROG −
ON
SW3
0
1
2
3
4
5
6
7
8
9
D3
D4
D5
D6
D7
D8
D9
D10
D11
D12
D3−12
1S1555
IC1
CX7947
REMOTE CONTROL TRANSMITTING
D1
SLR−932A
TRANSMIT INDICATOR
D2
SR−106C−4
INFRARED RADIATION
SW1
COMMAND OFF
KI 1
KI 2
KI 3
KI 4
KI 5
KI 6
KI 7
KI 8
KO 1
KO 2
KO 3
KO 4
KO 5
KO 6
KO 7
MD 0
MD 1
MD 2
MD 3
MD 4
MD 5
VDD
IND
IR
CL1
CL2
VSS
3.2 (0.1)
3.2 (0.2)
R1 1.5 (1/4W)
R3 560
0 (0.2)
2.6 (2.4)
0 (0.1)
R2 120
480 kHz
1.4 (1.1)
C1 100p
C3 47/16V
X1 480k
3.2 (1.6)
C2 100p
9.2
Q1
Q1
2SC2673
DRIVE
BATTERY SIZE "AA" (IEC DESIGNATION R6) 2PCS 3V
no mark : WITH NO BUTTON PRESSED
( ) : WITH THE ▶ BUTTON PRESSED

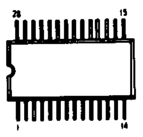
Note on Schematic Diagram:

- All resistors are in ohms, $^1/_6$W unless otherwise noted. kΩ: 1000 Ω, MΩ: 1000 kΩ
- All capacitors are in μF unless otherwise noted. p: μμF 50WV or less are not indicated except for electrolytics.
- All voltages are dc measured with a VOM (10 MΩ).
- ▬ : B+ bus.

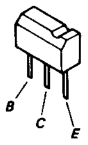
When indicating parts by reference number, please include the board name.

• SEMICONDUCTORS

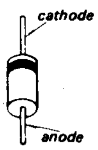
CX7947



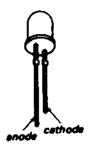
2SC2673



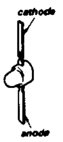
1S1555


cathode
anode

SLR-932A

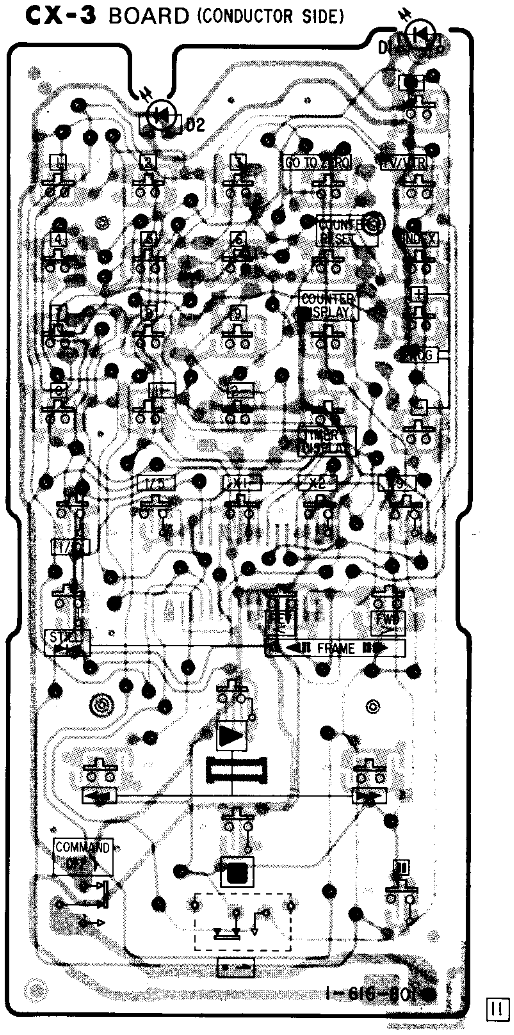

anode
cathode

SR106C


cathode
anode

3. PRINTED WIRING BOARD

CX-3 BOARD (CONDUCTOR SIDE)


1
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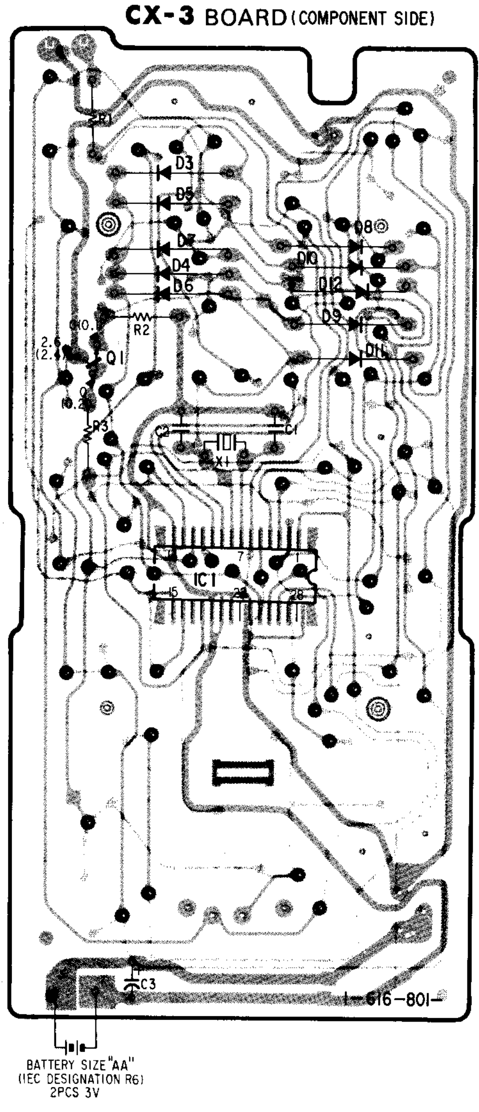
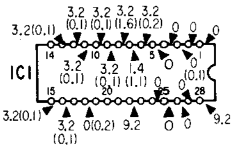
6
7
A
B
C
D
E
F
G
H
I
D1
D2
1
2
3
GO TO ZERO
TV/VTR
4
5
6
COUNTER RESET
INDEX
7
8
9
COUNTER DISPLAY
PROG
0
+
TIMER DISPLAY
1/5
×1
×2
1/9
STILL
FRAME
FWD
COMMAND
1-616-801
11

CX-3 BOARD (COMPONENT SIDE)


R1
D3
D5
D7
D4
D6
D8
D10
D12
D9
D11
R2
Q1
2.6
(2.4)
(0.
0
(0.2)
R3
C2
C1
X1
IC1
7
15
21
28
C3
1-616-801
11

BATTERY SIZE "AA"
(IEC DESIGNATION R6)
2PCS 3V


IC1
3.2(0.1)
3.2 (0.1)
3.2 (0.1)
3.2 (1.6)
3.2 (0.2)
0
0
0
14
10
5
1
3.2 (0.1)
3.2 (0.1)
1.4 (1.1)
0
0 (0.1)
15
20
25
28
0
0
3.2(0.1)
3.2 (0.1)
0(0.2)
9.2
0
0
9.2

no mark : WITH NO BUTTON PRESSED
( ) : WITH THE ▶ BUTTON PRESSED

Note on Printed Wiring Board:

- ○—— : Indicates a leadwire mounted on the component side.
- ●—— : Indicates a leadwire mounted on the printed side.
- ● : through hole
- ░ : conductor side/component side.
- ░ : B+ pattern
- ░ : conductor side/component side.
- ⊗ : Through hole.
- ▨ : carbon pattern.

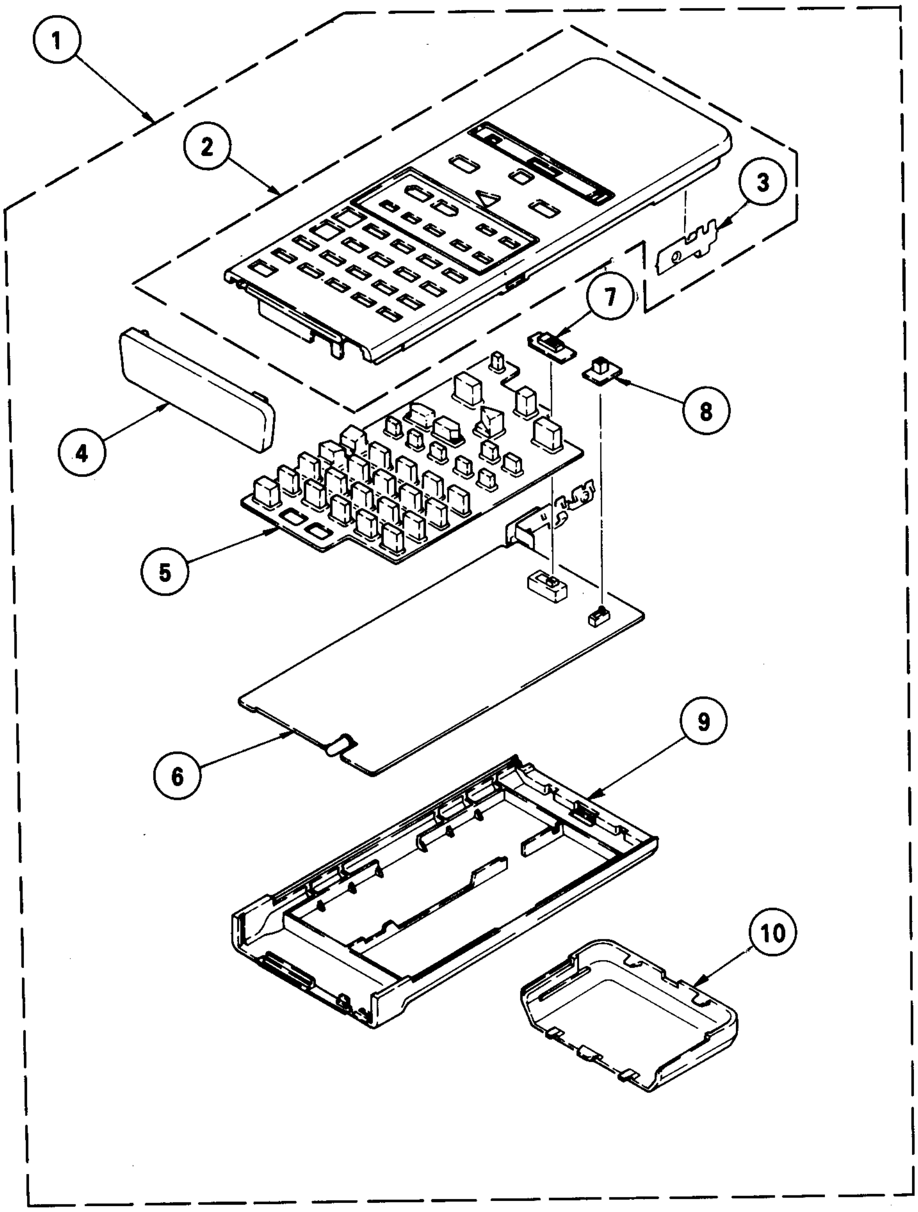
When indicating parts by reference number, please include the board name.

MC-Service

4. EXPLODED VIEW

NOTE:

- Itmes with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.



No.	Part No.	Description	Remark
1	A-6765-943-A	COMMANDER ASSY	2-10
2	X-2394-107-1	CASE ASSY, UPPER	3
3	*2-394-113-01	TERMINAL (C), BATTERY	
4	2-394-117-01	FILTER	
5	2-394-129-01	RUBBER, CONTACT	
6	*1-616-801-11	CX-3 BOARD	
7	2-394-119-01	BUTTON, RECORD	
8	2-394-118-11	BUTTON (COMMAND), SLIDE	
9	2-394-125-11	CASE, LOWER	
10	2-394-123-01	COVER, BATTERY	

5. ELECTRICAL PARTS LIST

NOTE:

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS

- All resistors are in ohms
- F : nonflammable

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

CAPACITORS

- MF : µF, PF : µµF

COILS

- MMH : mH, UH : µH

Ref.No	Part No.	Description	Remark
	*1-616-801-11	CX-3 BOARD ***********	
	*2-394-115-01	TERMINAL (B), BATTERY	
	*2-394-116-01	TERMINAL (A), BATTERY	
		CAPACITOR	
C001	1-102-973-00	CERAMIC 100PF 10% 50V	
C002	1-102-973-00	CERAMIC 100PF 10% 50V	
C003	1-124-236-00	ELECT 47MF 20% 16V	
		DIODE	
D001	8-719-912-39	DIODE SLR-932A	
D002	8-719-107-95	DIODE SR106C	
D003	8-719-815-55	DIODE 1S1555	
D004	8-719-815-55	DIODE 1S1555	
D005	8-719-815-55	DIODE 1S1555	
D006	8-719-815-55	DIODE 1S1555	
D007	8-719-815-55	DIODE 1S1555	
D008	8-719-815-55	DIODE 1S1555	
D009	8-719-815-55	DIODE 1S1555	
D010	8-719-815-55	DIODE 1S1555	
D011	8-719-815-55	DIODE 1S1555	
D012	8-719-815-55	DIODE 1S1555	
		IC	
IC001	8-759-902-22	IC CX-7947	
		TRANSISTOR	
Q001	8-729-967-32	TRANSISTOR 2SC2673	
		RESISTOR	
R001	1-247-073-00	CARBON 1.5 5% 1/4W	
R002	1-247-809-00	CARBON 120 5% 1/6W	
R003	1-247-825-00	CARBON 560 5% 1/6W	
		SWITCH	
SW001	1-553-997-00	SWITCH, KEY BOARD	
SW003	1-554-364-00	SWITCH, SLIDE	
		CRYSTAL	
X001	1-527-476-00	OSCILLATOR, CERAMIC	

****

SL-HF950ES/E
RMT-223

English
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Printed in Japan
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9-972-428-01

Sony Corporation

SL-HF950ES/E
RMT-223

SONY
SERVICE MANUAL

AEP Model
E Model
November, 1985

SUPPLEMENT-1

File this supplement with the service manual.

SUBJECT : ADJUSTMENT

SECTION 7

ADJUSTMENTS

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1. PREPARATION FOR MECHANICAL SECTION CHECK, ADJUSTMENT AND REPLACEMENT

The 11 items of the disassembly procedure mentioned below are detailed on the SL-HF950ES/E SERVICE MANUAL page 35 – 40.

1-1. DISASSEMBLY OF CABINET

1-2. REMOVAL OF THE TA-36/37 BOARD

1-3. REMOVAL OF THE SS-50 BOARD

1-4. REMOVAL OF THE YC-40 BOARD

1-5. REMOVAL OF THE FR-20 BOARD

1-6. REMOVAL OF THE FL-8, FL-9 BOARDS

1-7. REMOVAL OF THE RP-31 BOARD

1-8. REMOVAL OF THE POWER BLOCK

1-9. REMOVAL OF THE REEL BLOCK ASSEMBLY

1-10. REMOVAL OF THE LS BLOCK ASSEMBLY (1)

1-11. REMOVAL OF THE LS BLOCK ASSEMBLY (2)

1-12. REMOVAL OF THE UPPER STAY AND THE DRUM COVER

1) Remove two screws (BVTP3 x 6) ❶ and then remove drum cover ❹.
2) Push both claws ❸ outward, and remove drum cover ❹ in the arrow Ⓐ direction.

Note:

When drum cover ❹ is installed, make sure to tilt protector ❺ backward until it comes under drum cover ❹.

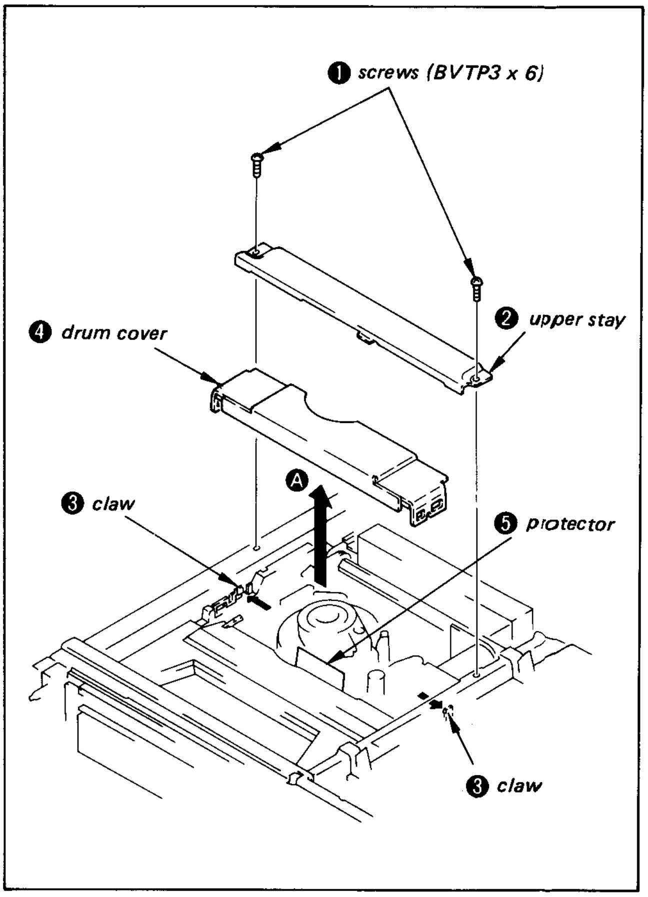


Fig. 1-1

1-13. REMOVAL OF THE TRAY COVER AND THE TRAY M COVER

1) Eject the lid by pressing EJECT button or using the procedure of 1-15-3.
2) Remove tray cover ❶ upward by bending its both side outward.
3) Remove tray M cover ❷ downward by bending its both side outward.

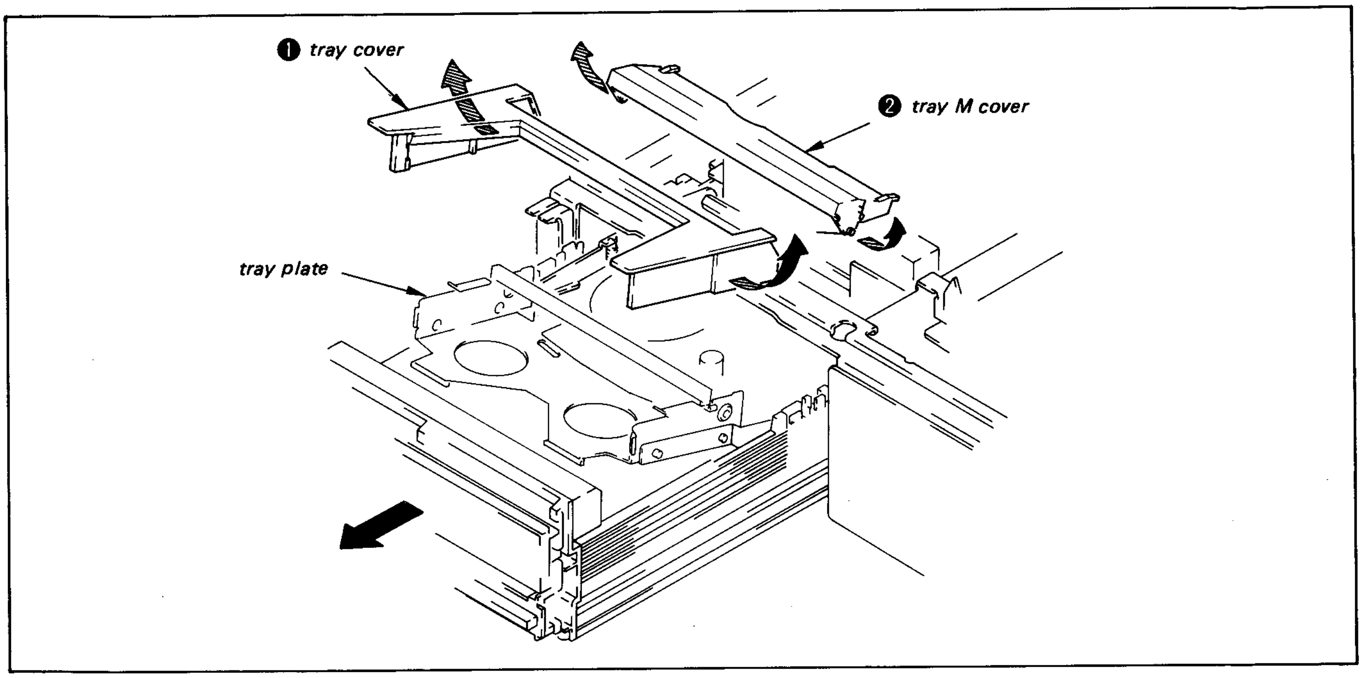


Fig. 1-2

1-14. MECHANICAL OPERATION WITHOUT CASSETTE

1-14-1. Threading Method Without Cassette

1) Turn POWER switch on.
2) Press the cassette down switch ❶ to on. Then, threading occurs.

1-14-2. Playback Method Without Cassette

Complete the threading with the procedure of 1-14-1, then press the playback button.

1-14-3. Setting Picture Recording Mode Without Cassette

Complete the threading with the procedure of 1-14-1, then press the accidental erasure prevention switch ❷, followed by the picture-recording button.

Note:

If the picture-recording button is pressed without pressing the accidental erasure prevention switch ❷, unthreading occurs, and the lid is ejected.

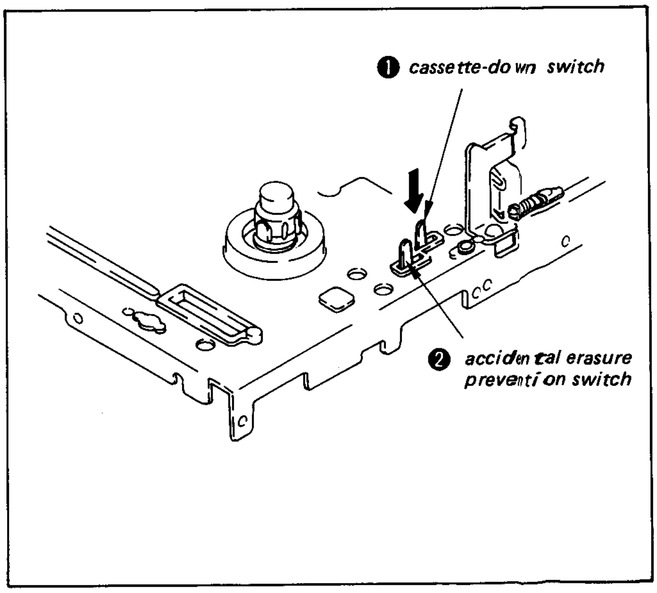


Fig. 1-3

1-15. UNTHREADING, UNSKATING, AND EJECTING WHEN POWER IS OFF

1-15-1. Unthreading Method (I)

From the stabilized DC power supply, apply 7 to 10 V in the polarity reverse to the silk-screened +/– indication (as shown Fig. 1-4) to the legs of the L motor on the LM-17 board.
If the voltage is applied in the same polarity as the silk-screened +/– indication, threading occurs.

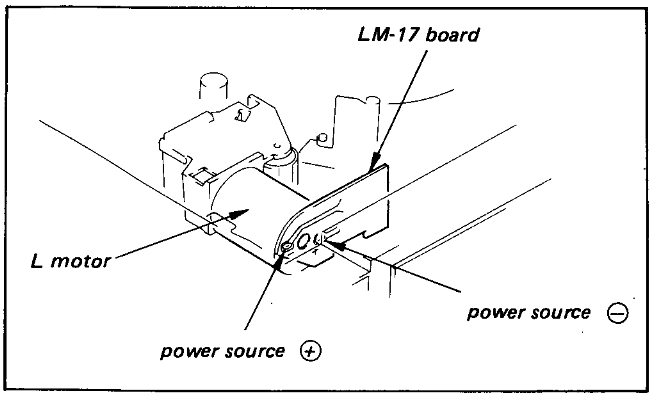

LM-17 board
L motor
power source ⊖
power source ⊕

Fig. 1-4

1-15-2. Unthreading Method (II)

1) Remove screw (PTP2.6 x 8) ❶ and remove L motor assembly ❷ upward (Fig. 1-5).
2) Push arm lock ❸ in arrow Ⓐ direction, and release the lock (Fig. 1-6).
3) Turn gear ❹ of the gear chassis block assembly clockwise (Fig. 1-6).
   When gear ❹ is turned counterclockwise, threading occurs.

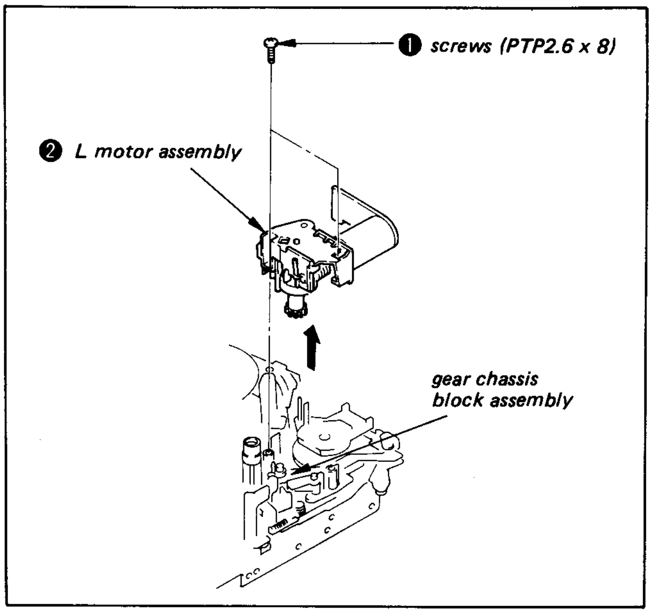

❶ screws (PTP2.6 x 8)
❷ L motor assembly
gear chassis block assembly

Fig. 1-5

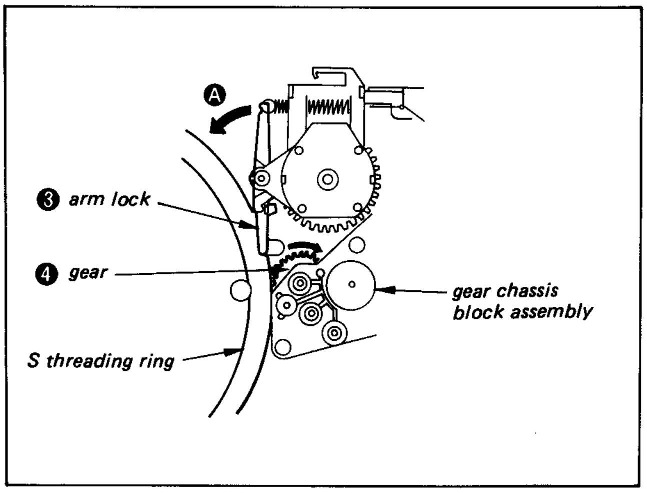

Ⓐ
❸ arm lock
❹ gear
S threading ring
gear chassis block assembly

Fig. 1-6

1-15-3. Unskating and Ejecting Methods

1) Complete the threading with the procedure of 1-15-1 or 1-15-2.
2) Slowly pull LS assembly ❶ in arrow Ⓐ direction with the hand, until the lefthand stopper functions.
3) Slowly lift tray ❷ in arrow Ⓑ direction with the hand.

Note:

Complete the unthreading, because if insufficient, the righthand eject stopper functions, and the LS assembly cannot fully be pulled out.

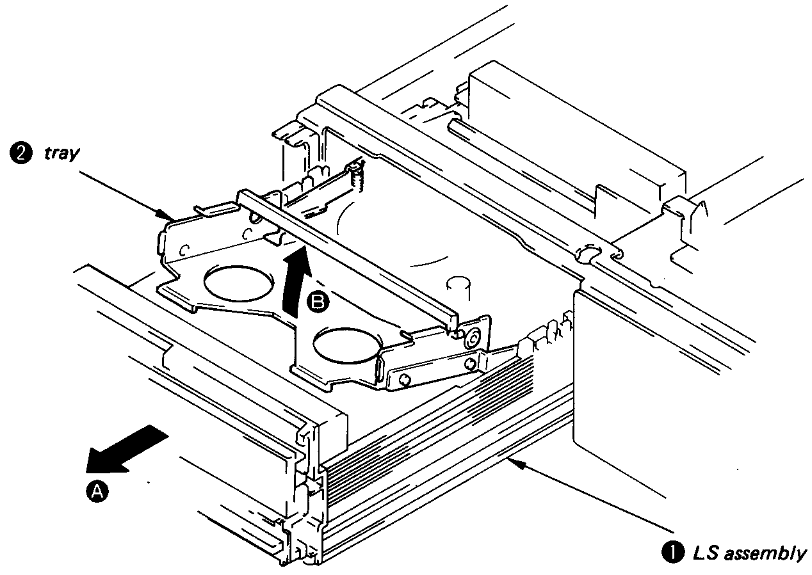


Fig. 1-7

1-16. TOOLS AND FIXTURES REQUIRED FOR SERVICING

Ref. No.	Name	Part Code	Carved Jig No.	Use and Remarks
J-1	Torque Measurement Tape	J-6080-003-C	SL-0003C	forward torque and back tension measurement
J-2	Parallel Plate	J-6086-750-A	SL-0657	audio/CTL head lateral adjustment capstan shaft vertical adjustment
J-3	Dental Mirror (handle) Dental Mirror (mirror)	J-6080-029-A J-6080-030-1	SL-5052	tape path and tape traveling adjustment check
J-4	Alignment Tape (KR5-2H)	8-969-995-52	———	tracking, overall adjustment of picture quality, etc.
	Alignment Tape (KR5-10C)	8-192-508-01		
J-5	Cleaning Fluid	Y-2031-001-0	———	
J-6	Thickness Gauge	9-911-053-00	———	
J-7	Chamois Cloth	2-034-697-00	———	cleaning
J-8	Head Demagnetizer	widely available	———	demagnetization of video head and audio head
J-9	Cleaning Cassette Tape	8-888-004-00	———	video head cleaning
J-10	Dihedral Adjustment Screw	J-6080-013-A	SL-0013	video dihedral adjustment
J-11	Video Head Checker	7-732-080-01	SL-5151	video head check

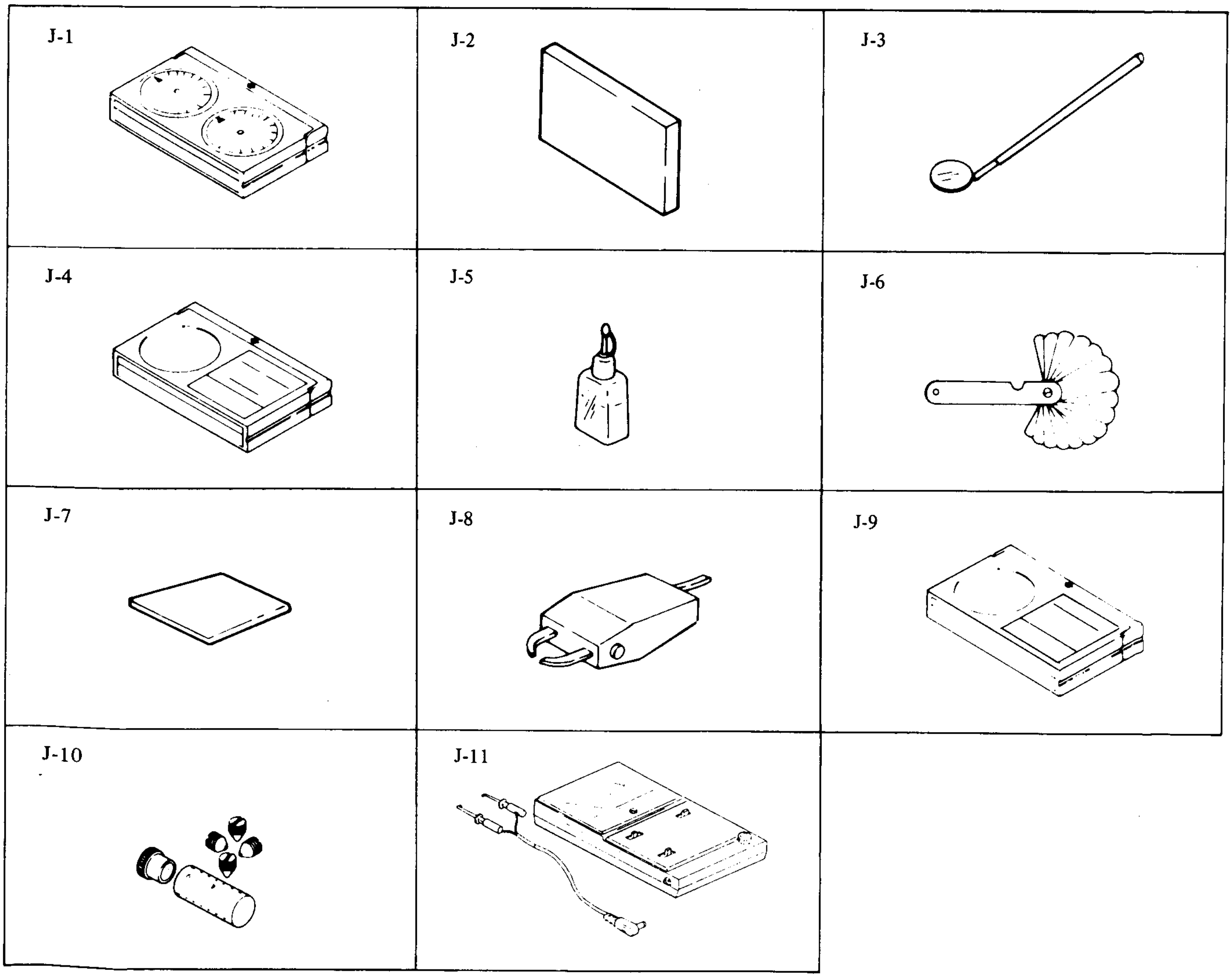


Fig. 1-8 Tools and fixtures required for servicing

2. PERIODIC CHECK AND MAINTENANCE

In order to obtain the best performance from this unit and make full use of its capabilities, and to extend the life of the unit and tapes, it is recommended that the following periodic checks and maintenance be performed.

2-1. POST-REPAIR MAINTENANCE

The following must be done after every repair regardless of how many hours the user has operated the machine.

2-1-1. Cleaning of Rotating Head Disk Assembly

1) Press a chamois cloth (Jig Ref. No. J-7) which has been dipped in cleaning fluid (Jig Ref. No. J-5) lightly against the rotating drum assembly, then do the cleaning by slowly rotating the rotating head disk by hand. (Never try to clean by using the motor to turn it.)
2) Never try to clean by moving the chamois cloth at a right angle to the head tip. There is a very great danger of damaging the head tip if this is done.

2-1-2. Cleaning of the Tape Movement System

1) Clean the surfaces which the tape contacts during its movement (tape guide, drum assembly surface, capstan, pinch roller, etc.) with a chamois cloth that has been dipped in in cleaning fluid.

2-1-3. Cleaning the Drive System

1) Clean the driving parts with a cloth that has been dipped in cleaning fluid.

parts requiring cleaning

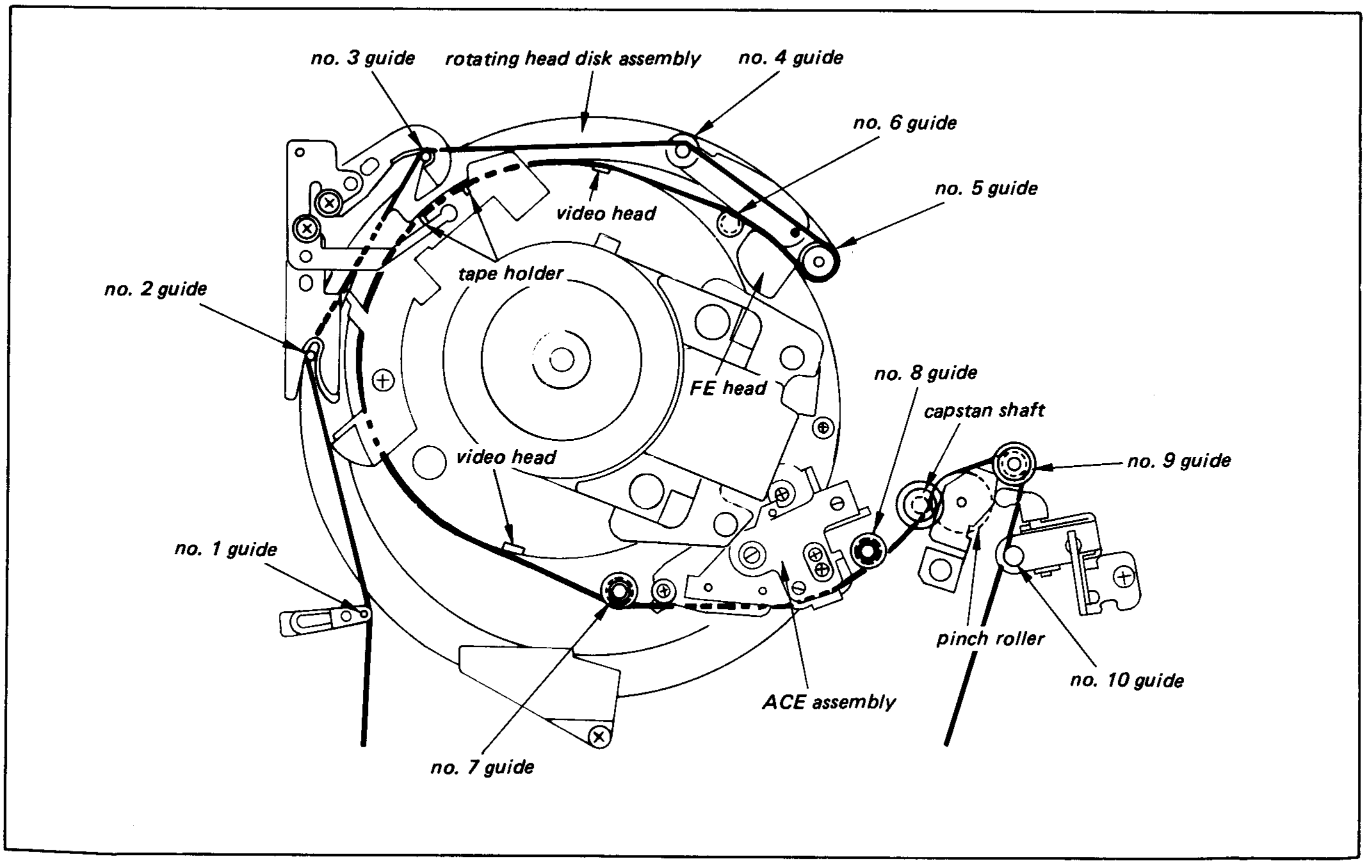

no. 3 guide
rotating head disk assembly
no. 4 guide
no. 6 guide
no. 5 guide
video head
tape holder
no. 2 guide
FE head
no. 8 guide
capstan shaft
no. 9 guide
video head
no. 1 guide
pinch roller
no. 10 guide
ACE assembly
no. 7 guide

Fig. 2-1 Parts requiring cleaning

2-2. PERIODIC CHECK ITEMS

Perform the maintenance and check listed on the table below, accoring to user's operating hours.

Maintenance & Check		Operating Hours (H) Repalcement Part No.	500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	Remarks
Tape Trans Portation System	Cleaning of tape transportation system	——	○	○	○	○	○	○	○	○	○	○	This cleaning must be done whenever a repair is made.
	Cleaning and degaussing of ACE ass'y	——	○	○	○	○	○	○	○	○	○	○	
	Cleaning & degaussing of video disk ass'y	——	○	○	○	○	○	○	○	○	○	○	The life of the head varies, depending on operational conditions and method.
Performance Confirmation	Abnormal sound		☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Adjust or replace the section which causes abnormal sound.
	Measurement of FWD back tension		–	☆	–	☆	–	☆	–	☆	–	☆	Confirmation must be made according to 3-12. Specified value: adjust to 44 ±4 g·cm (When measured with torque cassette tape.)
	Confirmation of brake system		–	☆	–	☆	–	☆	–	☆	–	☆	
	Confirmation of record & playback functions		☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Perform the confirmation whenever repair is made.
	Confirmation of forward torque		☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	45 – 90 g·cm (SL-0003C)

○ Cleaning ★ Replacement ☆ Confirmation

Note:

On overhaul

When overhauling the unit, replace parts as indicated in the above table.

3. CHECK, ADJUSTMENT, AND REPLACEMENT PROCEDURES

3-1. STATE OF WEAR OF VIDEO HEADS CHECK

As the accuracy of the check depends on the state of the heads and precision of the checker, the results should be taken only as an indication of the state of wear.

[Adjustment of video head checker]

1) Mechanical zero
   Verify that the pointer of the video head checker is at the mechanical zero position. If it is not at this position, adjust the mechanical zero control.
2) Battery voltage check
   Set the MODE switch to "BATT" and set the POWER switch to "ON". The deflection of the pointer should be within the range marked "BATT". If not, replace the battery (use a 6F22 battery) as follows.
3) Calibration check
   Set the POWER switch to "ON" and the MODE switch to "CAL", then adjust the CAL control so that the pointer is on the CAL mark.
   Note 1: Be sure to carry out this adjustment whenever the RANGE switch is changed.
   Note 2: Be sure to check CAL before measuring the head and proceed the measurement after adjusting CAL, if CAL is not properly set.

[Method of measurement]

1) Remove the two screws (+PTPWH2) ① that hold the tape guide ground plate in place, then remove the tape guide ground plate.
2) Remove the two screws (P2 x 3) ② that hold the damper assembly in place, then remove the damper assembly.
3) Remove the hexagonal socket head bolt (3 x 8) ③ using a hexagonal wrench (2.5 mm) and the two screws (P3 x 8) ④. Then remove the upper drum assembly.
4) Unsolder the four connection pins ⑤ for the two AFM (AUDIO) heads from the rotary coupler assembly.
5) Remove the two hexagonal socket head bolts (2.6 x 8) ⑥ that hold the rotary coupler assembly in place using a hexagonal wrench (2.0 mm), then remove the rotary coupler assembly.
   Note: Be sure to check the positions of the two AFM (AUDIO) heads for A-CH and B-CH before refitting the rotary coupler assembly.
   On the disk assembly, "A"and "B" are marked, and on the rotary coupler assembly, "a" and "b" are marked. Fit and solder the rotary coupler assembly metching a for A, b for B.
6) Unsolder the six lead wires and two connection pins for the four video heads. (Don't care that unsolder only one lead wire for each four video heads.)
7) Attach the measuring clips to the head leads.
   Be sure to separated the leads by at least 1.5 cm.
8) Set RANGE switch to "A" and MODE switch to "MEAS". The pointer will deflect to indicate the state of wear of the heads.
   Note: The deflection for the 4 video heads may be different, so be sure to measure both.

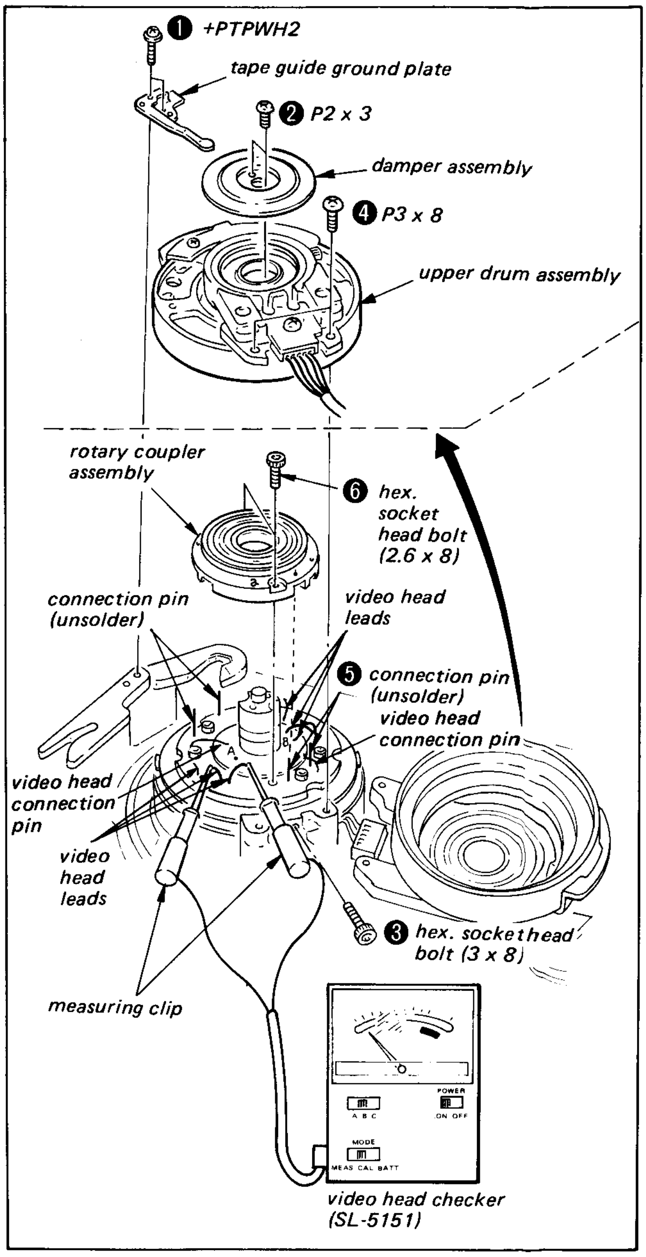
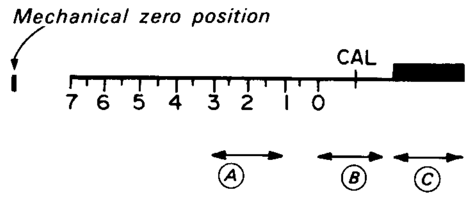

❶ +PTPWH2
tape guide ground plate
❷ P2 x 3
damper assembly
❹ P3 x 8
upper drum assembly
rotary coupler assembly
❻ hex. socket head bolt (2.6 x 8)
connection pin (unsolder)
video head leads
❺ connection pin (unsolder)
video head connection pin
video head connection pin
video head leads
❸ hex. sockethead bolt (3 x 8)
measuring clip
POWER
ON OFF
A B C
MODE
MEAS CAL BATT
video head checker (SL-5151)

Fig. 3-1


Mechanical zero position
CAL
7 6 5 4 3 2 1 0
Ⓐ
Ⓑ
Ⓒ

Ⓐ : *Deflection when heads are O.K.*
Ⓑ : *Deflection when heads need replacing.*
Ⓒ : *Deflection when heads are worn.*

Fig. 3-2 Measured value

3-2. REPLACING ROTARY HEAD DISK ASSEMBLY

Accessory adjusting jig: Feeler gauge 1, feeler gauge 2

Note:

Keep them after replacing the rotary head disk, since they will be needed when replacing the guide arm assembly and the rotary coupler assembly. (They are not delivered with the guide arm assembly or the rotary coupler assembly.)

3-2-1. Removing Rotary Head Disk Assembly (See Fig. 3-3)

Note:

While removing the rotary head disk assembly, never move screws ❽ clamping the guide arm assembly. If they are moved, a centering adjustment will be required later. (Refer to Paragraph 3-3-3.)

1) Unscrew two screws ❶ clamping the damper assembly, and remove the damper assembly.
2) Unscrew hex. socket head bolt ❷ with an Allen wrench.
3) Unscrew two screws ❸ , and remove the upper drum assembly.

Note:

Remove while turning the upper drum assembly, taking care not to move the adjust plate. If the adjust plate is moved, the tape pass is badly influenced (See Fig. 3-13).

4) Unsolder the four connection pins ❹ from the coupler disk.
5) Unscrew two hex. socket head bolts ❺ , and remove the rotary coupler assembly.

Note:

To be able to refit the rotary coupler in the correct relative position, memorize the position relative to connection pins 4 .

6) Unsolder the red, white, blue and black leads at six positions, and unsolder the two connection pins ❻ from the intermediary board of the rotary head disk.
7) Unscrew four hex. socket head bolts with washers ❼, and remove the rotary head disk assembly.

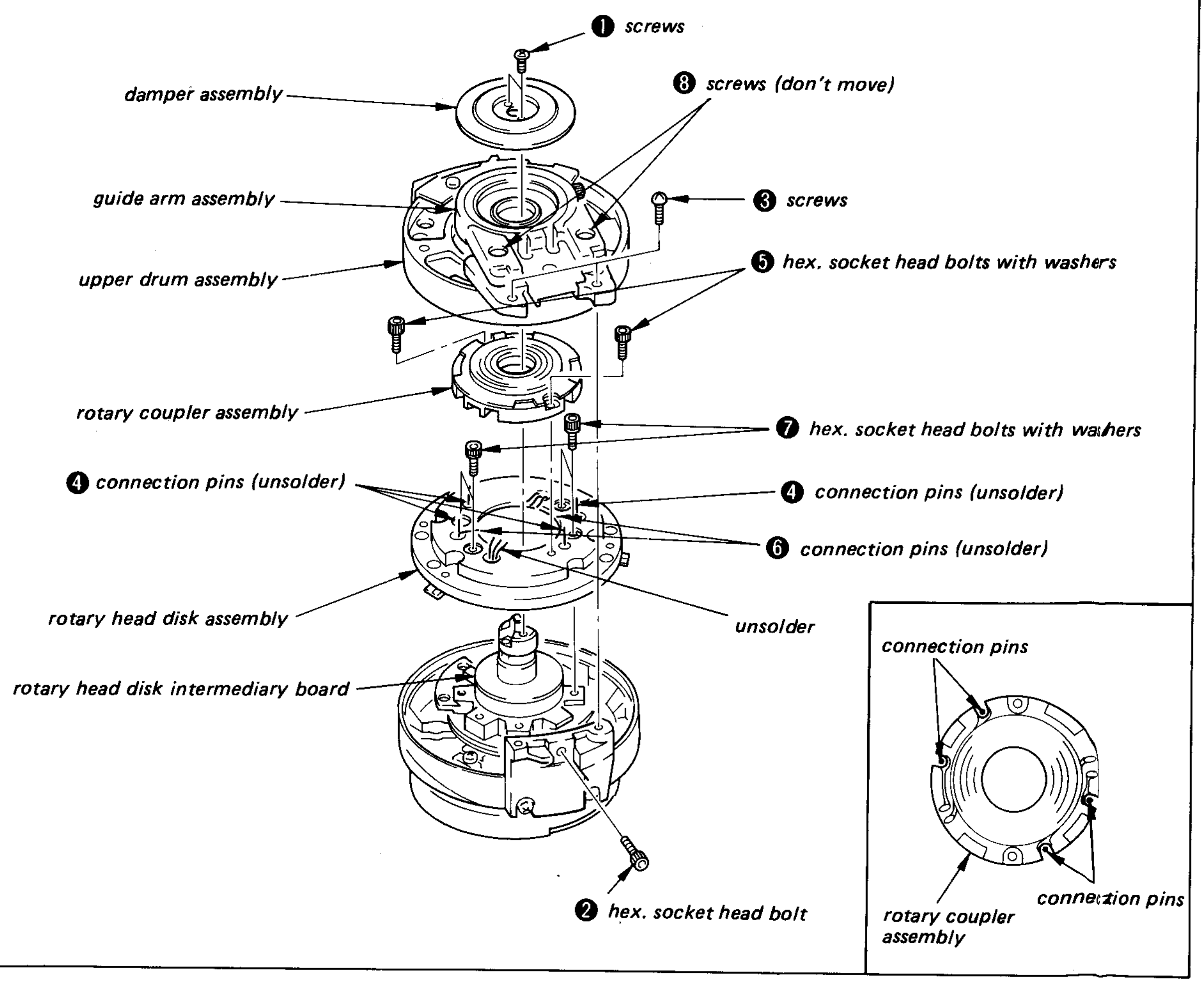

❶ screws
damper assembly
❽ screws (don't move)
guide arm assembly
❸ screws
❺ hex. socket head bolts with washers
upper drum assembly
rotary coupler assembly
❼ hex. socket head bolts with washers
❹ connection pins (unsolder)
❹ connection pins (unsolder)
❻ connection pins (unsolder)
rotary head disk assembly
unsolder
rotary head disk intermediary board
connection pins
connection pins
rotary coupler assembly
❷ hex. socket head bolt

Fig. 3-3 How to remove rotary head disk

3-2-2. Refitting Rotary Head Disk Assembly

Note:

Be extremely careful not to damage the head chip by touching or fouling it.

1) Solder the six leads to the video head of the rotary head disk assembly. (Caution on correct orientation of the magnet.) Thread the leads through the holes (See Fig. 3-4).
2) Refit the four connection pins to the rotary head disk assembly (See Fig. 3-5).
3) Bend the connection pins and solder them to the AFM heads (See Fig. 3-5).
   Bend one connection pin for each AFM heads.
4) Refit the rotary head disk assembly, paying attention to the positions of the red, white, blue and black leads, and to the orientation of the connection pins. (White on Ach side.)
5) Tighten four hex. socket head bolts ❼ (see Fig. 3-3), and solder the leads to the head intermediary board of rotary head disk (See Fig. 3-6-a).
6) Refit the rotary coupler assembly, and tighten two hex. socket head bolts ❺ (See Fig. 3-3).
7) Solder the four connection pins to the rotary coupler assembly (See Fig. 3-6-b).
8) Refit the upper drum assembly without moving the adjust plate, and lightly tighten screws ❸ . Tighten hex. socket head bolt ❷ , and then, tighten screws ❸ firmly (See Fig. 3-3).
   Note:
   While refitting the upper drum assembly, take care not to foul the head chip.
9) Check the AFM rotary transformer gap with the feeler gauges (See Fig. 3-7). Feeler 1 must go in and feeler 2 must not go in. If the gap is incorrect, readjust the gap. (Refer to Paragraph 3-2-3).
10) Refit the damper assembly, and tighten screw ❶ (See Fig. 3-3).

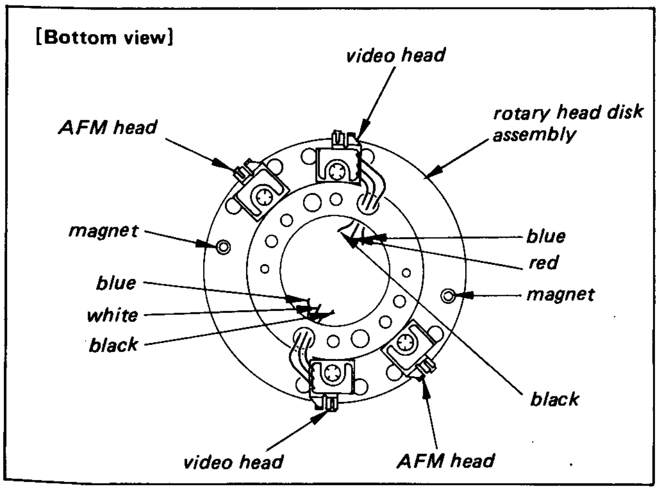

[Bottom view]
video head
AFM head
rotary head disk assembly
magnet
blue
red
blue
white
black
magnet
black
video head
AFM head

Fig. 3-4 How to refit rotary head disk (1)

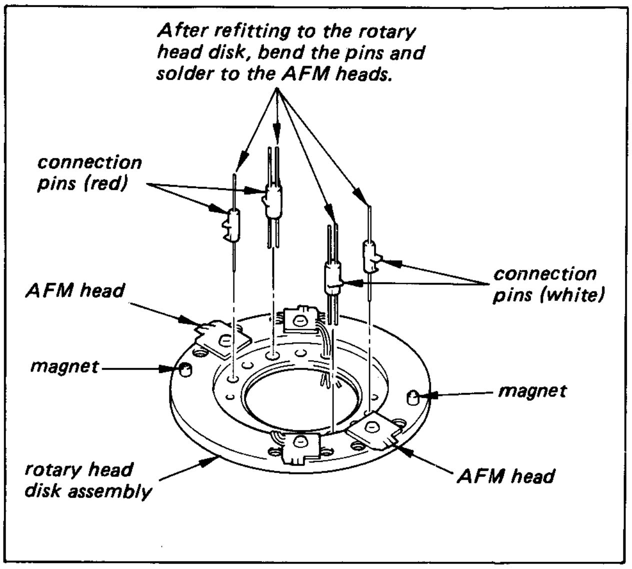
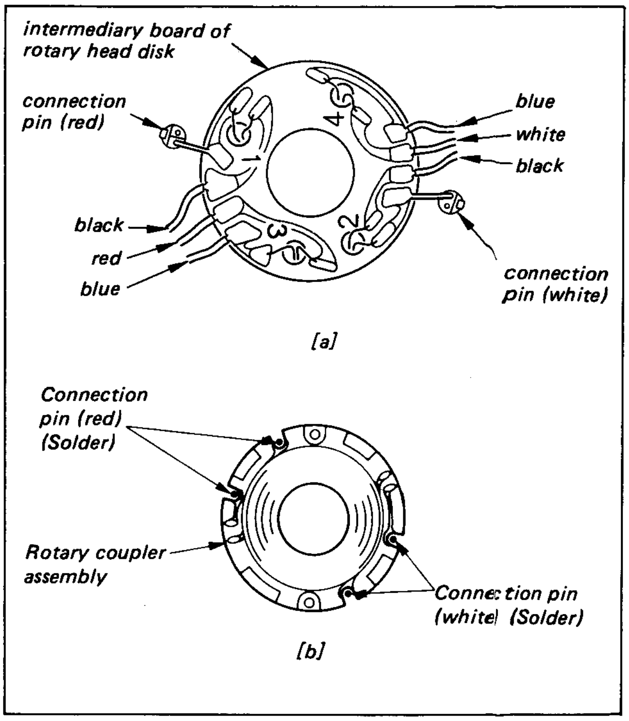

After refitting to the rotary head disk, bend the pins and solder to the AFM heads.
connection pins (red)
connection pins (white)
AFM head
magnet
magnet
rotary head disk assembly
AFM head

Fig. 3-5 How to refit rotary head disk (2)


intermediary board of rotary head disk
connection pin (red)
blue
white
black
black
red
blue
connection pin (white)
1
2
3
4
Connection pin (red) (Solder)
Rotary coupler assembly
Connection pin (white) (Solder)

[a]

[b]

Fig. 3-6 How to refit rotary head disk (3)

3-2-3. Adjusting AFM Rotary Transformer Gap (See Fig. 3-7)

1) Loosen hex. socket head bolt ❶ for the guide arm assembly without unscrewing, and lift the upper ring assembly slightly.
2) Insert feeler gauge 1 into the gap in the rotary transformer, and push the upper ring assembly downward.
   Note: Take care not to tilt the upper ring assembly.
3) Tighten the hex. socket head bolt ❶ while holding the upper ring assembly down.
   Note:
   Take care not to move the upper ring assembly while tightening the bolt.
4) Remove feeler gauge 1, and ascertain that feeler gauge 2 does not enter the gap. If it enters, start readjusting from process 1) on.

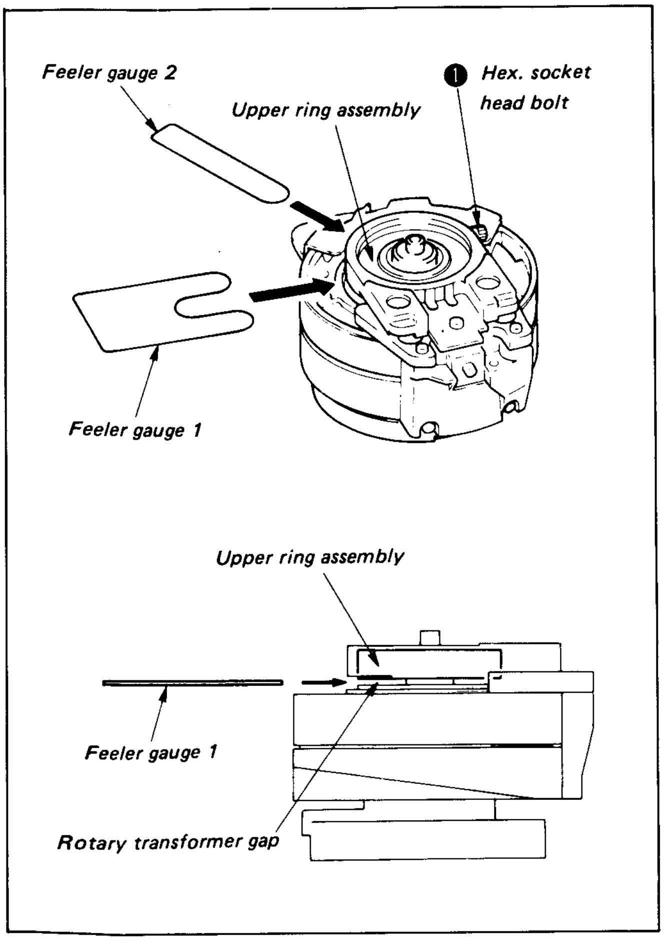

Feeler gauge 2
Upper ring assembly
❶ Hex. socket head bolt
Feeler gauge 1
Upper ring assembly
Feeler gauge 1
Rotary transformer gap

Fig. 3-7 Adjusting AFM rotary transformer gap

3-3. REPLACING UPPER DRUM

Accessory adjusting jig: Centering jig

Note:
Keep it carafully after replacing the upper drum, as it will be used again when replacing the guide arm assembly. (It does not accompany the guide arm assembly.)

3-3-1. How to Remove Upper Drum (See Fig. 3-8)

Note:
While removing the upper drum, never move hex. socket head bolt ❼. If it is moved, the gap in the rotary transformer must be adjusted later. (Refer to Paragraph 3-2-3.)

1) Unscrew two screws ❶ and remove the damper assembly.
2) Unscrew two screws ❷ , and remove the guide arm assembly.
3) Unscrew hex. socket head bolt ❸ with an Allen key.
4) Unscrew two screws ❹ , and remove the upper drum together with the upper drum mounting plate.
   Note:
   Be extremely careful not to touch parts around the drum.
5) Unscrew two screws ❺ , and remove the upper drum mounting plate from the upper drum.
6) Unscrew two screws ❻ , and remove the tape retainer spring assembly.

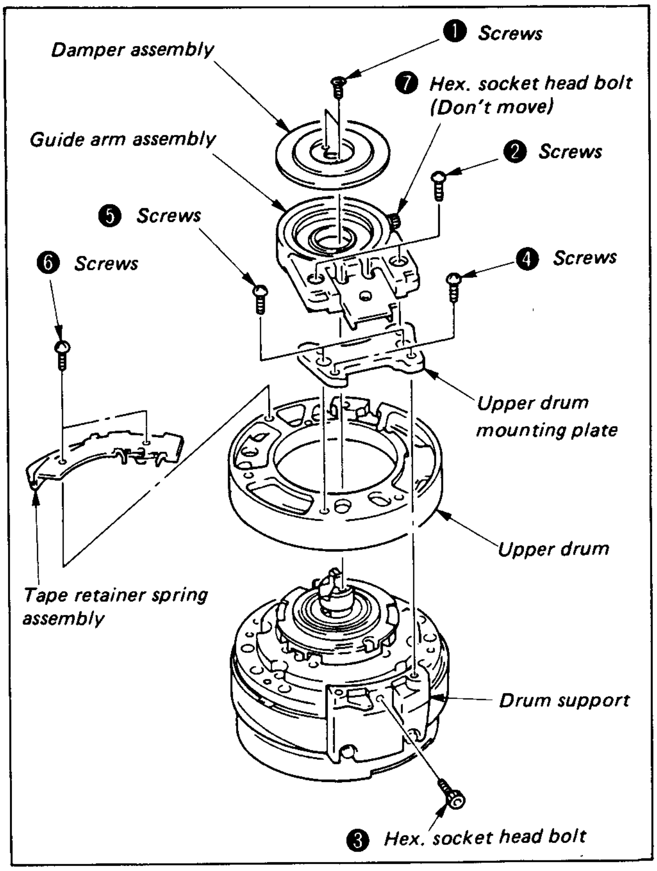

❶ Screws
Damper assembly
❼ Hex. socket head bolt (Don't move)
Guide arm assembly
❷ Screws
❺ Screws
❻ Screws
❹ Screws
Upper drum mounting plate
Upper drum
Tape retainer spring assembly
Drum support
❸ Hex. socket head bolt

Fig. 3-8 How to remove upper drum

3-3-2. How to Refit Upper Drum (See Fig. 3-8)

1) Fit the tape retainer spring assembly to the replacement upper drum with two screws ❻.
2) Refit the upper drum mounting plate with two screws ❺.
3) Lightly clamp the upper drum mounting plate installed to the upper drum to the drum support with two screws ❹.
4) Tighten hex. socket head bolt ❸ while holding the upper drum and the upper drum mounting plate tightly onto the drum support by hand.
5) Firmly tighten two screws ❹.
6) Refit the guide arm assembly with two screws ❷.
   Note:
   Don't firmly tighten screws 2, but allow the guide arm assembly to move horizontally.
7) Insert the centering jig found in the box of the replacement upper drum between the guide arm assembly and the damper holder, and tighten screws ❷ firmly. Remove the centering jig, and check the clearance between the guide arm assembly and the damper holder for uniform distribution (See Fig. 3-8, 3-9).
8) Refit the damper assembly with two screws ❶.

3-3-3. Centering Adjustment (See Fig. 3-9)

1) Loosen the screw ❷ fastening the guide arm assy without removing the screw, enabling the guide arm assy to move horizontally.
2) Insert the centering jig supplied as an accessory in the gap between the guide arm assy and damper holder on the change upper drum.
3) Tighten the screw ❷ holding the centering jig.
4) Remove the centering jig and check that the gap between the guide arm assy and damper holder is uniform. Readjust starting 1) if the gap is not even.

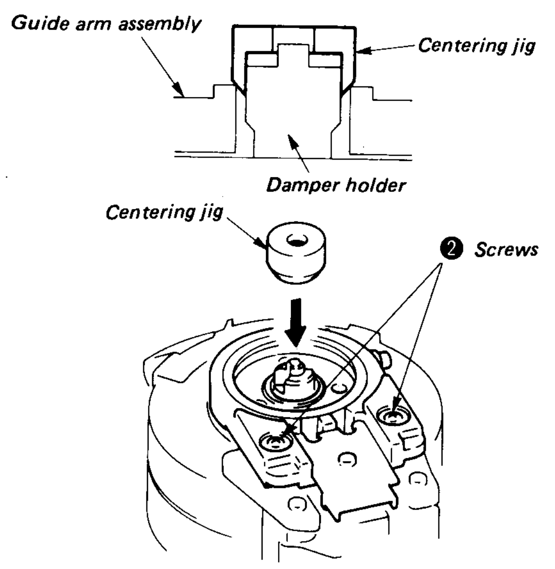


Fig. 3-9 Centering adjustment

3-4. CAUTION WHEN CHANGING ROTARY COUPLER ASSY AND GUIDE ARM ASSY

1) Make sure to adjust the gap (refer to Paragraph 3-2-3) after changing the rotary coupler assy.
   The adjust jigs (spacers 1 and 2) can be found with the rotary head disk assy for repair (A-6762-226-A).
2) Make sure to adjust centering (refer to Paragraph 3-3-3) and gap (refer to Paragraph 3-2-3) after changing the guide arm assy.
   The adjust jigs (centering jig, feeler gauge 1 and 2) can be found with the upper drum for repair (A-6760-178-A) and rotary head disk assy for repair (A-6762-226-A). (Refer to Section 1-9)

3-5. VIDEO HEAD DIHEDRAL CHECK AND ADJUSTMENT

This adjustment is generally unnecessary, but it is sometimes necessary when the video head disk is replaced. (The video head disk used for maintenance has been precision adjusted at the factory using a microscope and almost never needs to be readjusted.)

When judging whether the video head dihedral angle is correct, the alignment tape is played back. When this is done the tracking control knob must be in the centering position. If the check is done with this knob in other than the center click position (if the tracking is off-center), even if the dihedral angle is correct the picture will be reproduced as if it were off.

Before this adjustment is performed, the ACE assembly position adjustment (refer to the section where the tape path adjustment is described) must be completed.

[Method of checking]

With the tracking control knob set to the center click position, play back the monoscope section of the alignment tape. Check to see if any of the vertical monoscope lines immediately below the switching pulse are reproduced double. If not, the dihedral angle is correct and does not have to be adjustment. If so, perform the adjustment as explained below.

[Adjusting method]

1) Insert the two dihedral adjusting screws (Jig Ref. No. J-10) into the adjusting screw holes on both sides of the video head –Ach (see Fig. 3-11) so that the tops of the adjusting screws flush with the upper face of the video head disk as shown in Fig. 3-10. (If screwing in is not sufficient, the video head disk does not rotate as the heads of the adjusting screws ram the upper drum. Conversely, if screwed in more than necessary, the head base is moved, and video head dihedral adjustment becomes very inaccurate.)

   Note:

   Be most careful the head under the part on the coupler board that is marked with white silk is the video head –Ach. The side marked b with white silk is the reference side. Never move it. (See Fig. 3-11.)

2) Of the two adjusting screws, screw in farther either one of them until resistance is felt. Screwing in the screw farther, the video head moves, and dihedral adjustment can be made. (See Fig. 3-12)
3) Play back the monoscope signal part of the alignment tape with the adjusting screw on and check the signal. Rotate the screwed in adjusting screw counterclockwise to loosen it, then screw in the adjusting screw on the other side if the dihedral quantity of the vertical line has become larger than before making the adjustment.
4) Remove the adjusting screws and recheck after completing the adjustment.

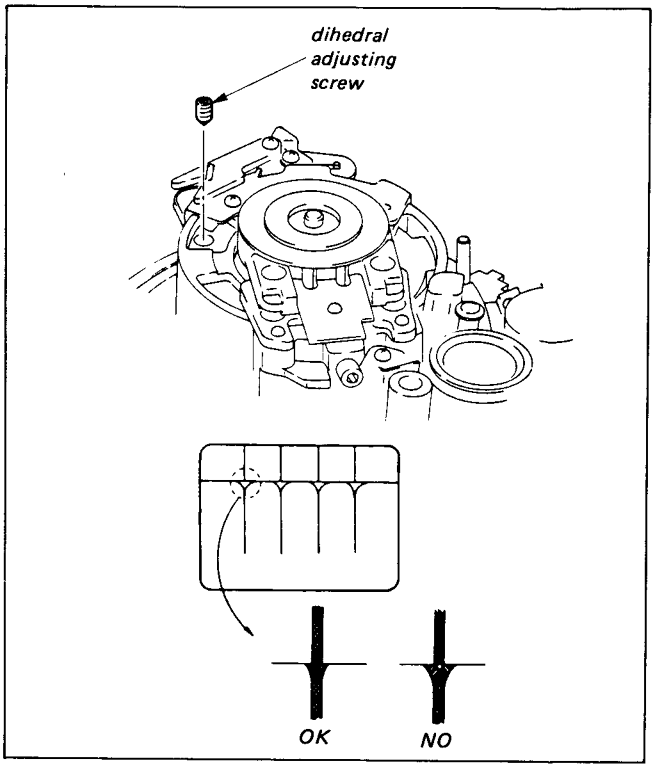

dihedral adjusting screw
OK
NO

Fig. 3-10 Video head dihedral adjustment (1)

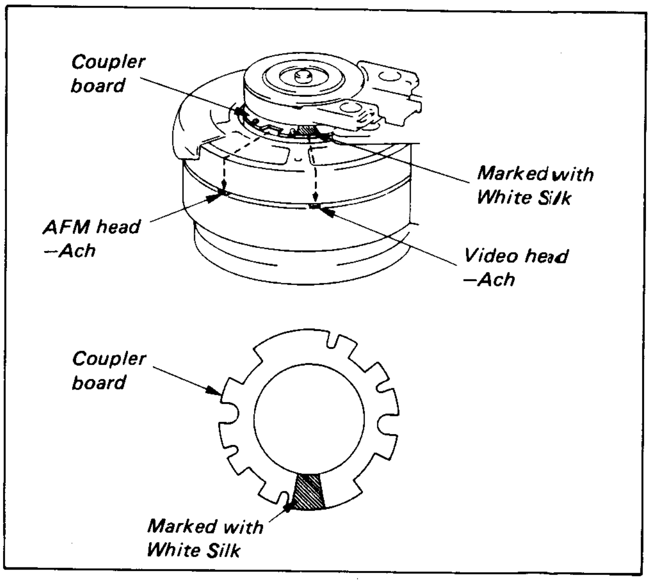

Coupler board
Marked with White Silk
AFM head –Ach
Video head –Ach
Coupler board
Marked with White Silk

Fig. 3-11 Video head dihedral adjustment (2)

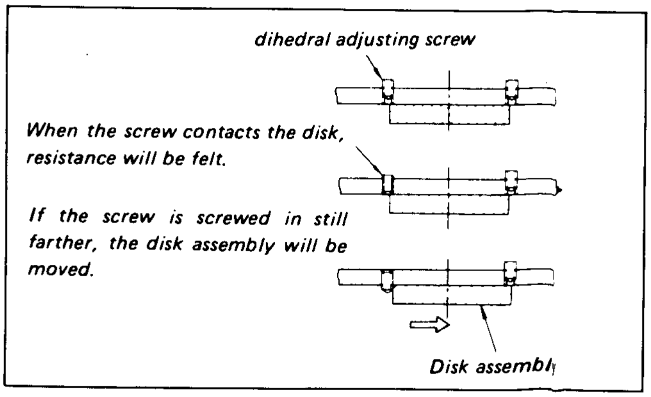

dihedral adjusting screw
When the screw contacts the disk, resistance will be felt.
If the screw is screwed in still farther, the disk assembly will be moved.
Disk assembly

Fig. 3-12 Video head dihedral adjustment (3)

3-6. REPLACEMENT AND ADJUSTMENT OF THE DRUM ASSEMBLY

3-6-1. Replacement of the Drum Assembly

1) Measure gap Ⓐ between adjusting plate 2 ❶ and the upperdrum holder section and record the measurement.
   Note:
   The position where the adjusting plate is mounted has a large effect on the tape path, so this measurement must be performed.
2) Measure gap Ⓑ between adjusting plate 3-1 ❷ and the upper drum holder section, and record the measurement.
   Note:
   The position where the adjusting plate is mounted has a large effect on the tape path, so this measurement must be performed.
3) Remove the screws ❸ shown in Fig. 3-13, then remove the tape guide ground plate and adjusting plates 2 and 3-1.
4) Remove the 3 connectors ❹ from the rear of the chassis as shown in Fig. 3-14.
5) Remove the 3 drum mounting screws ❺ from the rear of the chassis, then remove the main body of the drum assembly. After the replacement has been complated, adjust the drum path.

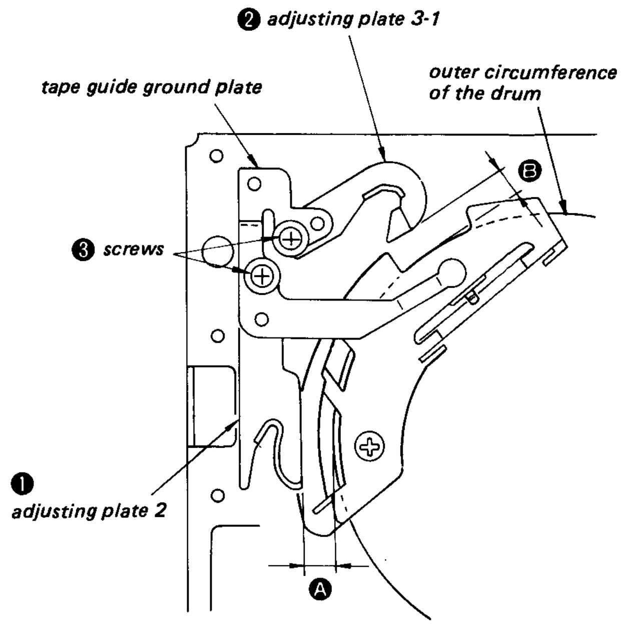

❷ adjusting plate 3-1
tape guide ground plate
outer circumference of the drum
Ⓑ
❸ screws
❶ adjusting plate 2
Ⓐ

Fig. 3-13 Measurement of the position of adjusting plates 2 and 3-1

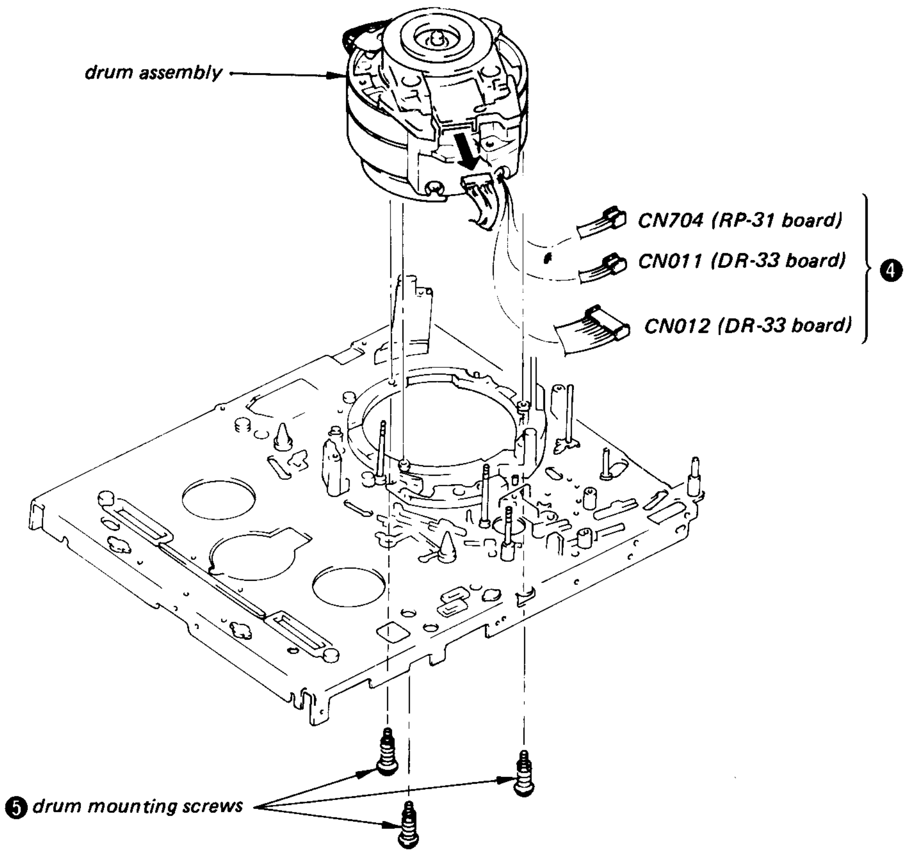

drum assembly
CN704 (RP-31 board)
CN011 (DR-33 board)
CN012 (DR-33 board)
❹
❺ drum mounting screws

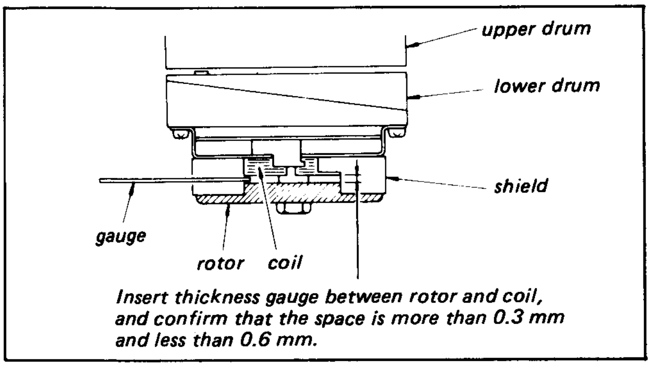
Fig. 3-14 Removal of the drum assembly

3-6-2. Adjustment of the Motor Gap when Replacing the Drum Assembly

After replacing the drum assembly, adjust the gap between the motor rotor and the coil to 0.3 mm to 0.6 mm (Fig. 3-15).

[Procedure]

1) When re-assembling the drum, use the spacers which were removed to produce a gap of between 0.3 mm and 0.6 mm. Measure the gap using the gauge. If the gap is adjusted correctly, the 0.3 mm side should fit in and the 0.6 mm side should not.
2) If this fails to give the correct gap width, do not use the spacers which were removed; instead, use a combination of the 4 0.3 mm accessory spacers to obtain the correct width.


upper drum
lower drum
shield
gauge
rotor
coil

Insert thickness gauge between rotor and coil, and confirm that the space is more than 0.3 mm and less than 0.6 mm.

Fig. 3-15 Checking the motor gap width after replacing the drum assembly

Removal of the stator and rotor when replacing the drum

1) Remove the nut ❶ and washer ❷.
2) Remove the rotor ❸ from the stator ❹.
3) Remove the❷ screws ❺, then remove the stator from the main body of the drum.

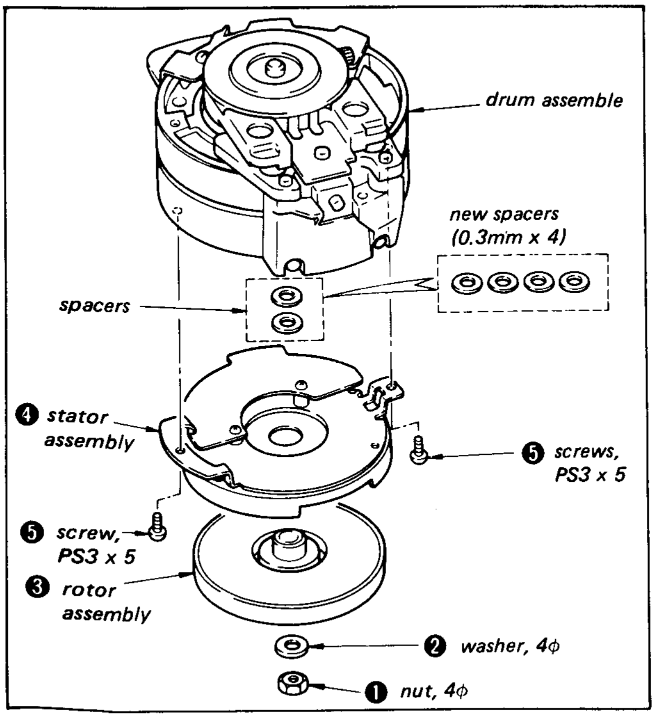

drum assemble
new spacers (0.3mm x 4)
spacers
❹ stator assembly
❺ screws, PS3 x 5
❺ screw, PS3 x 5
❸ rotor assembly
❷ washer, 4ϕ
❶ nut, 4ϕ

Fig. 3-16 Removal of the stator and rotor when replacing the drum

3-7. REPLACEMENT OF THE CAPSTAN MOTOR

3-7-1. Removal of the Capstan Motor (Fig. 3-17)

1) Remove the two screws (+PW2 x 6) ❶ and the screw (+P2.6 x 5) ❷.
2) Remove the capstan motor ❸ from the rear of the mechanical chassis.

Note:

When the capstan motor has been removed or replaced, check the tape path once.

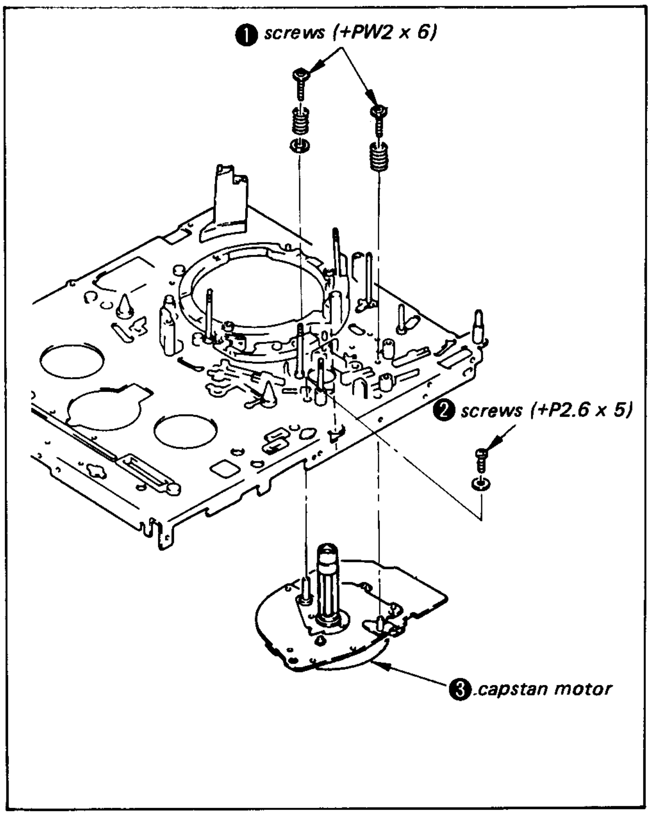

❶ screws (+PW2 x 6)
❷ screws (+P2.6 x 5)
❸.capstan motor

Fig. 3-17 Removal of the capstan motor

3-7-2. Capstan Shaft Verticality Adjustment

When the capstan motor has been replaced or removed, be sure to make the following adjustment.

1) Loosen clamping screws Ⓑ and Ⓒ.
2) Apply jig (J-2) vertically to the capstan motor shaft and the no. 8 guide sleeve, as shown in Fig. 3-10.
3) Turn adjust screw Ⓐ until the capstan motor shaft becomes vertical.
4) Apply the jig to the capstan motor shaft and the no. 10 guide shaft of the pinch arm assembly in the vertical attitude as shown in Fig. 3-11.
5) Turn adjust screw Ⓒ until the capstan motor shaft becomes vertical, and clamp the capstan motor.
6) Apply the jig again as shown in Fig. 3-10, and check the verticality of the capstan motor shaft. If it is not accurately vertical, repeat the processes from 3).
7) Tighten clamping screw Ⓑ to clamp the capstan motor.
8) Make adjustment following the described tape path adjustment processes.

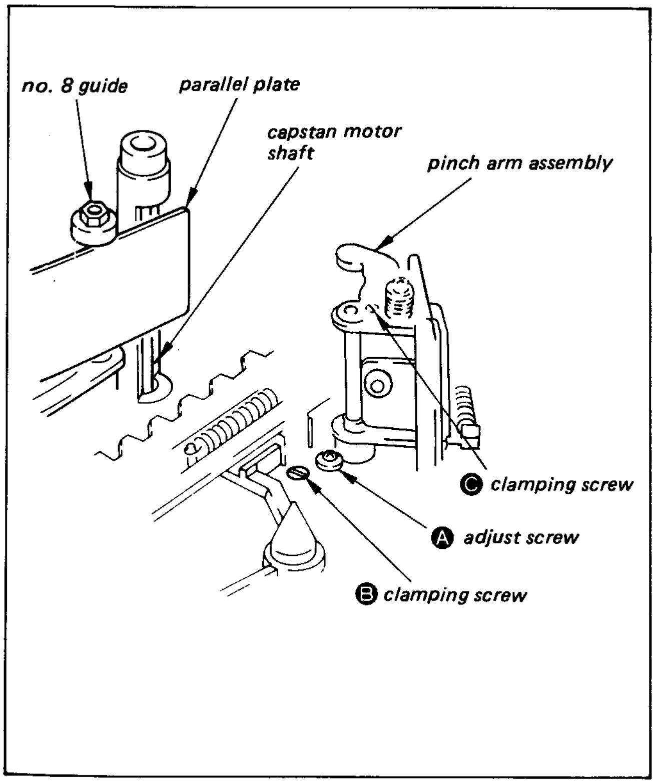

no. 8 guide
parallel plate
capstan motor shaft
pinch arm assembly
Ⓒ clamping screw
Ⓐ adjust screw
Ⓑ clamping screw

Fig. 3-18

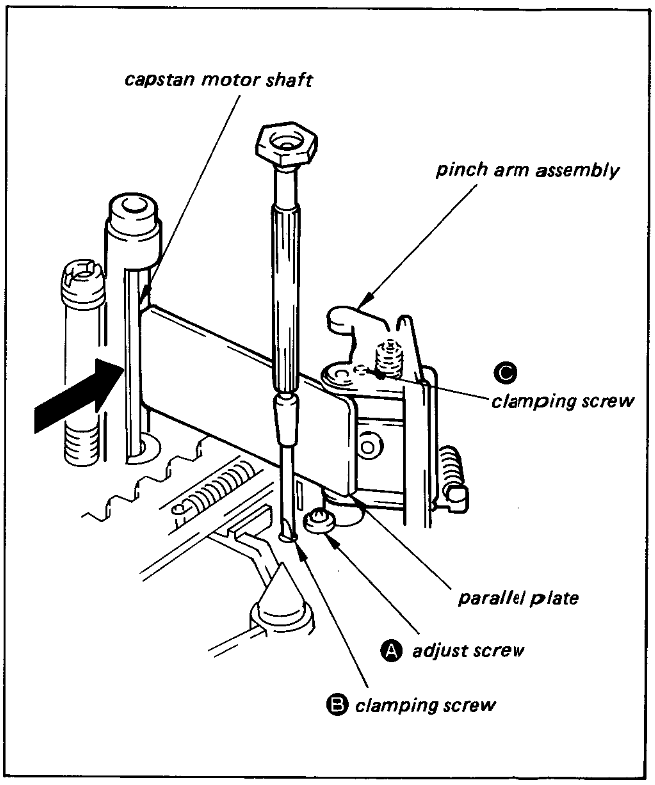
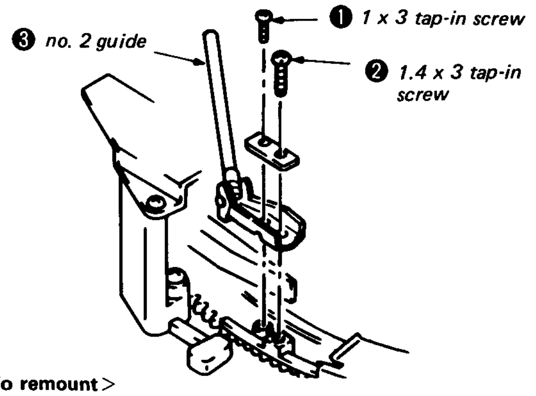

capstan motor shaft
pinch arm assembly
Ⓒ
clamping screw
parallel plate
Ⓐ adjust screw
Ⓑ clamping screw

Fig. 3-19

3-8. REMOVAL OF THE No. 2 AND No. 3 GUIDES

3-8-1. Removal of the No. 2 Guide

❶ Remove the 1x3 tap-in screw.
❷ Remove the 1.4x3 tap-in screw.
❸ REmove the No. 2 guide assembly.


❸ no. 2 guide
❶ 1 x 3 tap-in screw
❷ 1.4 x 3 tap-in screw

<To remount>

1) Loosely tighten the 1 x 3 tap-in screw.
2) Tighten the 1.4 x 3 tap-in screw all the way.
3) Adjust the 1 x 3 tap-in screw until the height is 35 mm. After adjustment, lock the screw.
Note: The no. 2 guide is up all the way.

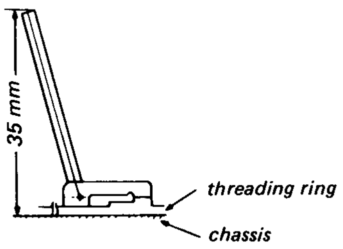
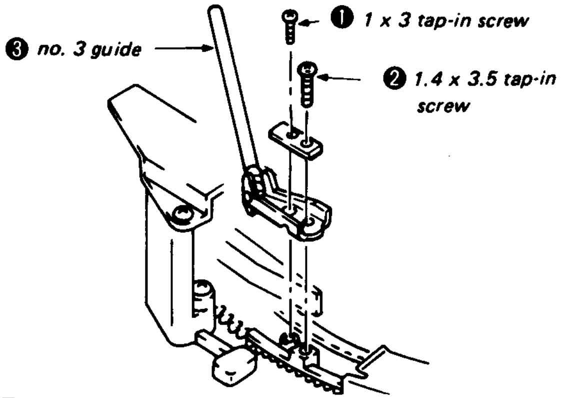

35 mm
threading ring
chassis

Fig. 3-20 Removal of the no. 2 guide

3-8-2. Removal of the No. 3 Guide

❶ Remove the 1x3 tap-in screw.
❷ Remove the 1.4x3.5 tap-in screw
❸ Remove the No. 3 guide assembly.


❸ no. 3 guide
❶ 1 x 3 tap-in screw
❷ 1.4 x 3.5 tap-in screw

<To remount>

1) Loosely tighten the 1 x 3 tap-in screw.
2) Tighten the 1.4 x 3.5 tap-in screw all the way.
3) Adjust the 1 x 3 tap-in screw so that the height is 30 mm. After adjustment, lock the screw.
Note: The no. 3 guide is up all the way.

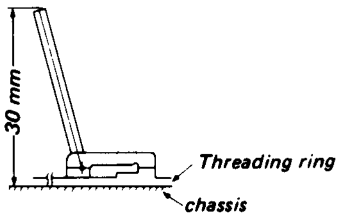

30 mm
Threading ring
chassis

Fig. 3-21 Removal of the no. 3 guide

3-9. REPLACEMENT AND ADJUSTMENT OF THE S THREADING RING

3-9-1. Preparation to Remove the S Threading Ring, Removal of the ACE Assembly, FE Head (Fig. 3-22)

❶ Remove the cross-recessed head screw.
❷ Remove the No. 6 guide nut.
❸ Remove the No. 6 washer.
❹ Remove the No. 6 guide spacer.
❺ Remove the compression coil spring.
❻ Remove the 2 guide adjustment screws, then remove the ACE assembly and the FE head.

Note:
Since the ACE assembly and the FE head are connected by a lead wire, be careful when removing them. It is not necessary to remove the compression coil spring below the ACE assembly, but be careful not to use it.

❼ Remove the L motor assembly, refer to 1) of "SECTION 1-15-2" Unthreading Method (II).

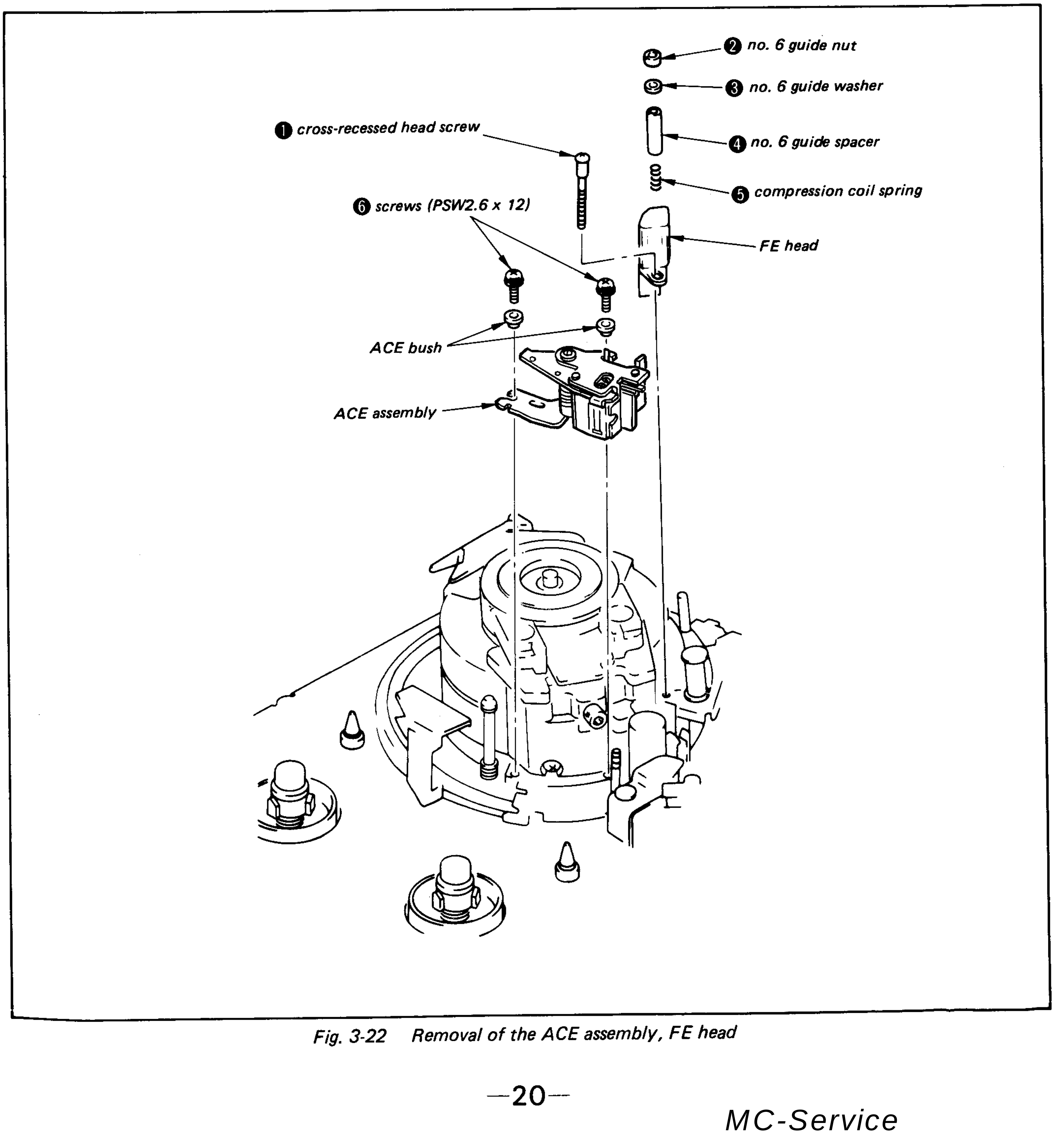

❷ no. 6 guide nut
❸ no. 6 guide washer
❶ cross-recessed head screw
❹ no. 6 guide spacer
❺ compression coil spring
❻ screws (PSW2.6 x 12)
FE head
ACE bush
ACE assembly

Fig. 3-22 Removal of the ACE assembly, FE head

Removal of Miscellaneous Parts (Fig. 3-23)

Proceeding in the same manner as in replacement of the drum assembly, measure the width of the gap between the upper drum and the adjusting plates (Fig. 3-13).

❶ Remove the screw, then remove the tape guide ground plate and adjusting plates 3-1 and 2.

❷ Remove the two screws, then remove the tape holder assembly.

❸ Remove the screw, then remove the guide plate.

❹ Remove the 2 PTPWH2x8 screws and the M2.6 screw, then remove shuttle guide 2.

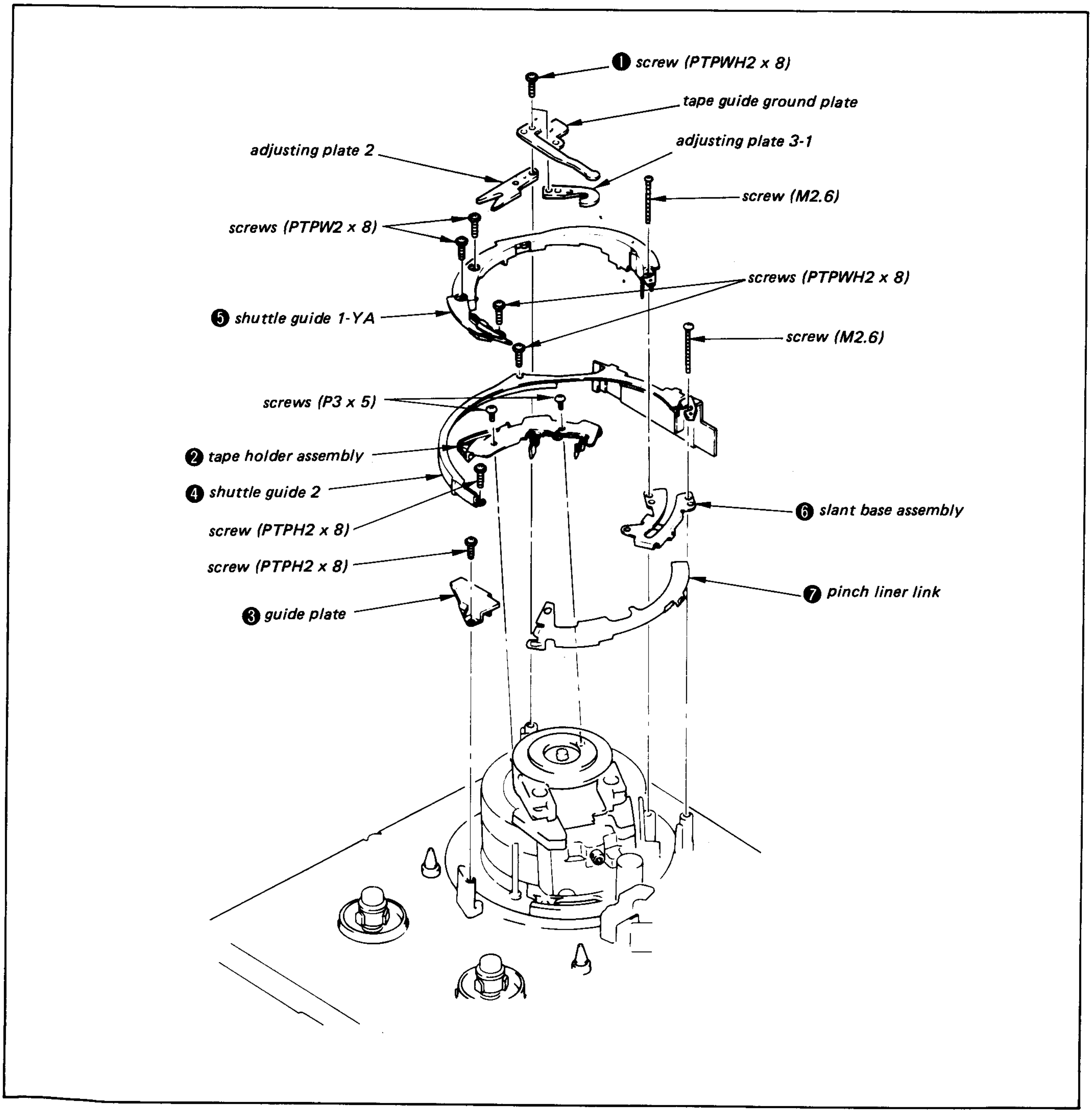
❺ Remove the 3 PTPWH2x8 screws and the M2.6 screw. Then remove the 2 claws holding shuttle guide 1-YA in place, and finally remove shuttle guide 1-YA.

❻ Remove the slant base assembly.

❼ Remove the BVTT2.6x6 screw, then remove the pinch liner link.

Note:

After removing the guide plate, do not thread or unthread a tape with the shuttle guide mounted.



❶ screw (PTPWH2 x 8)
tape guide ground plate
adjusting plate 2
adjusting plate 3-1
screw (M2.6)
screws (PTPW2 x 8)
screws (PTPWH2 x 8)
❺ shuttle guide 1-YA
screw (M2.6)
screws (P3 x 5)
❷ tape holder assembly
❹ shuttle guide 2
screw (PTPH2 x 8)
❻ slant base assembly
screw (PTPH2 x 8)
❼ pinch liner link
❸ guide plate

Fig. 3-23 Removal of miscellaneous parts

3-9-2. Removal of the S Threading Ring (Fig. 3-24)

❶ Turn the stop washer and remove the ring roller.
❷ Remove the S threading ring.

Note:
Once a stop washer has been removed, do not use it again.

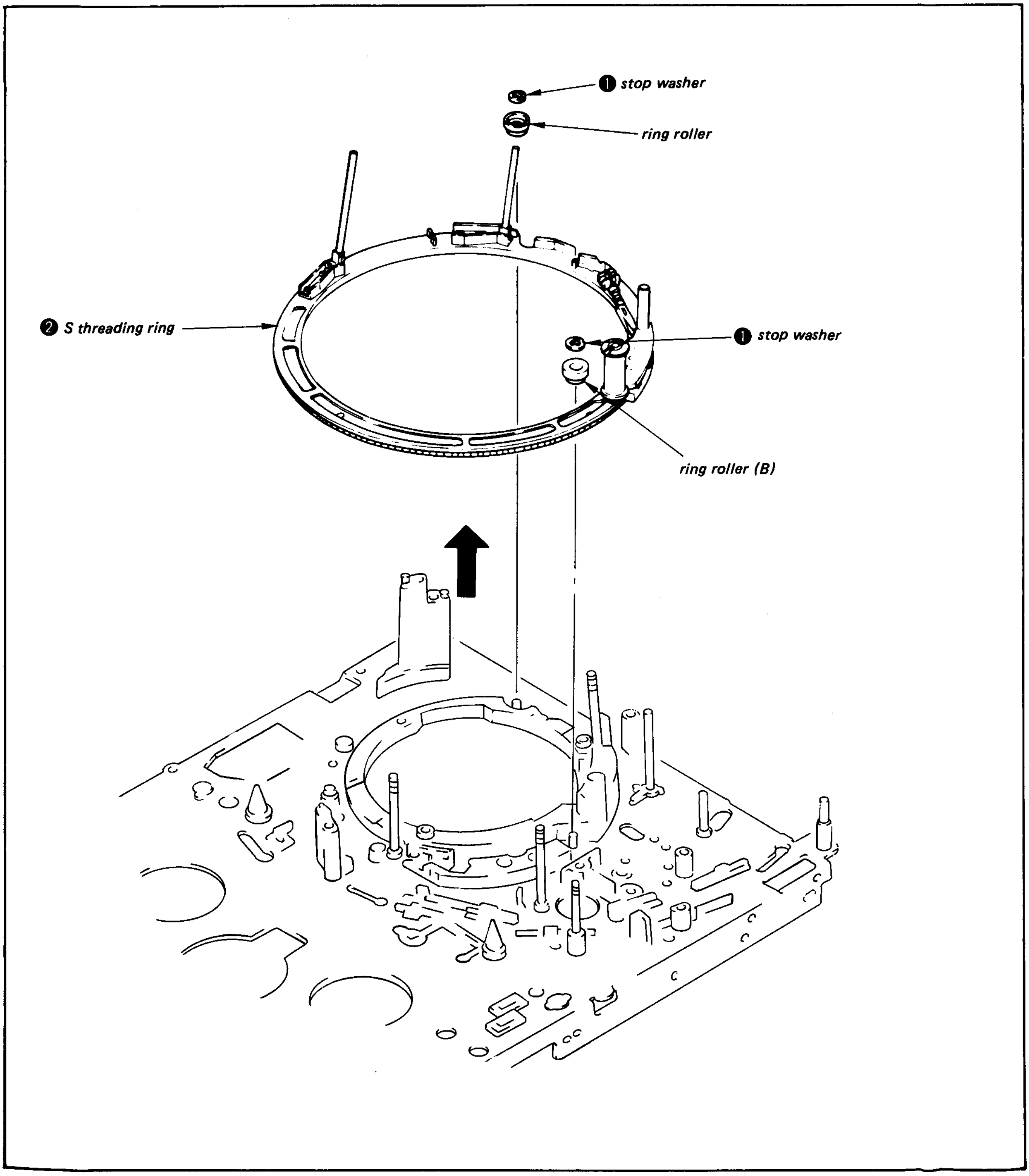

❶ stop washer
ring roller
❷ S threading ring
❶ stop washer
ring roller (B)

Fig. 3-24 Removal of the S threading ring

3-9-3. S Threading Ring Mounting and Position Adjustment

1) Keep T slider assembly ❶ at the position where the unthreading has been complete (the state where flag assembly ❷ completely covers T coil sensor ❸).
2) Mesh S threading ring ❹ with gear chassis block assembly ❺ so that the mechanical chassis hole comes to the longhole center.
   (If the mechanical chassis hole does not come to the center, turn the S threading ring in clockwise.)
3) Install ring roller (B) ❻, and fix with the retaining washer.

Note:

After replacement and installation, adjust the ACE assembly according to the tape pass adjustment procedure.

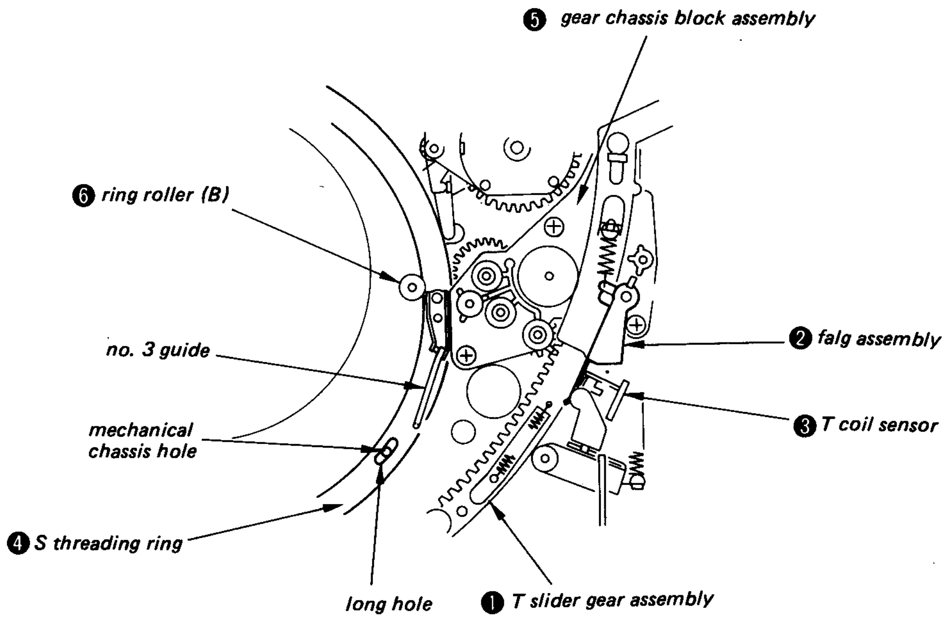

❺ gear chassis block assembly
❻ ring roller (B)
no. 3 guide
mechanical chassis hole
❹ S threading ring
long hole
❶ T slider gear assembly
❷ falg assembly
❸ T coil sensor

Fig. 3-25

3-10. REMOVAL AND ADJUSTMENT OF THE REEL BLOCK ASSEMBLY

3-10-1. Removal of the Reel Block Assembly

Refer to SECTION 2 DISASSEMBLY, 2-9 REMOVAL OF THE REEL BLOCK ASSEMBLY. (SERVICE MANUAL)

3-10-2. Removal and Refitting of the Tension Regulating Lever

[Removal]

1) Remove spring ❶ and remove S coil sensor ❷.
2) Remove tension regulating band ❸.
3) Remove spring ❹.
4) Unlock claw ❺ and remove tension regulating lever assembly ❻.

[Installation]

1) Insert tension regulating lever assembly ❻ until claw ❺ locks to shaft ❼.
2) Set spring ❹ across the claw of function lever ❽ and the fourth place from the left of the tension regulating lever assembly ❻ in section Ⓐ.
3) Push tension regulating lever assembly ❻ in arrow Ⓑ direction, and check it returns correctly.
4) Push tension regulating band ❸ until its hole is locked with the protrusion of tension regulating lever assembly ❻.
5) Insert shaft ❾ into the hole of S coil sensor ❷, and set spring ❶ across the claws of S coil sensor ❷ and the claw of function lever ❽.

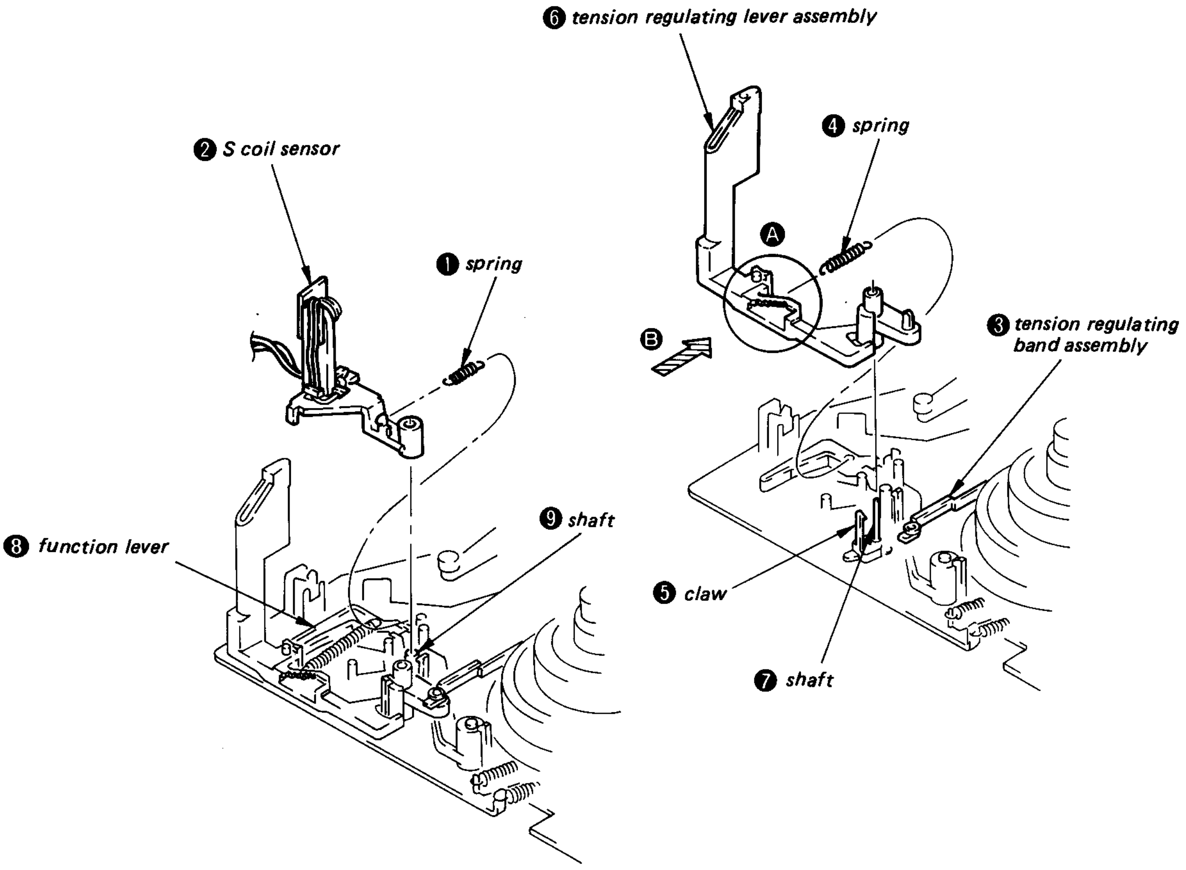

❻ tension regulating lever assembly
❷ S coil sensor
❹ spring
❶ spring
Ⓐ
Ⓑ
❸ tension regulating band assembly
❾ shaft
❽ function lever
❺ claw
❼ shaft

Fig. 3-26

3-10-3. S Coil Sensor, Harness Treatment and Operation Check

1) Thread harness ❷ from S coil sensor ❶ through claws ❹ avoiding subchassis hole ❸ and wind the harness around subchassis protrusion ❺.

2) While keeping tension regulating lever assembly ❻ pushed in arrow Ⓐ direction, slightly push S coil sensor ❶ in arrow Ⓑ direction. Release the hand and check that it is sprung back until it hits the subchassis protrusion ❼.

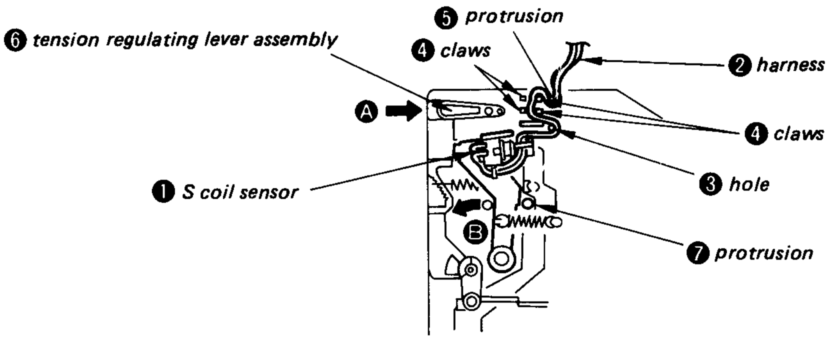

❺ protrusion
❻ tension regulating lever assembly
❹ claws
❷ harness
Ⓐ
❹ claws
❶ S coil sensor
❸ hole
Ⓑ
❼ protrusion

Fig. 3-27

3-10-4. Adjustment of the Position of Tension Regulating Lever

[Method of adjustment]

1) Set a cassette and enter a playback mode.
2) Check that the tension regulating lever assembly's tape guide pin is between shuttle guide 2 and shuttle guide 1-YA, as shown in Fig. 3-21.
3) If not positioned as step 2), press EJECT button and take out the cassette, loosen the adjusting screw, and adjust by moving the tension regulating lever assembly in arrow Ⓐ direction.
4) After the adjustment, tighten the adjusting screw while keeping the tension regulating lever assembly in the position.
5) Repeat steps 1) and 2).

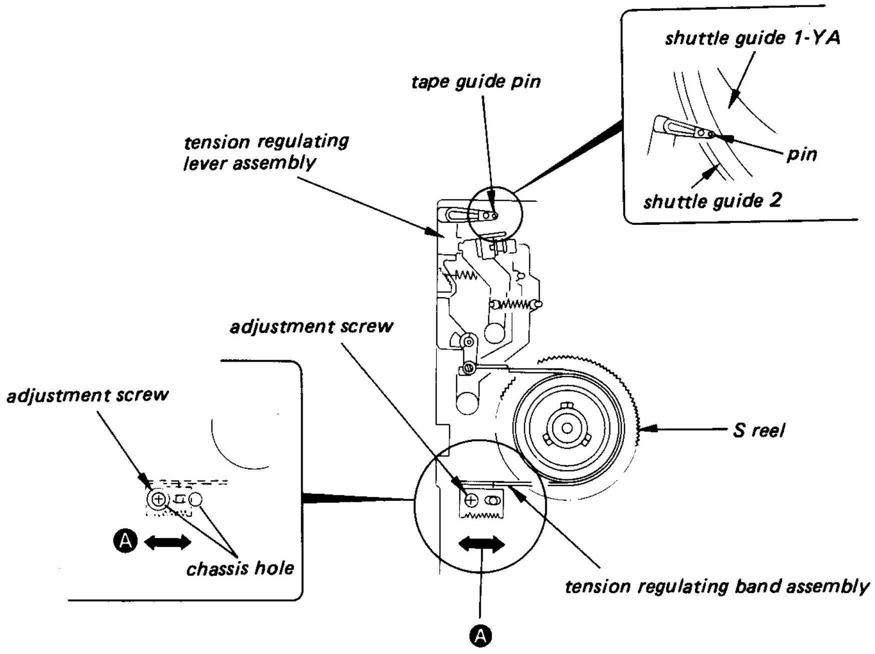
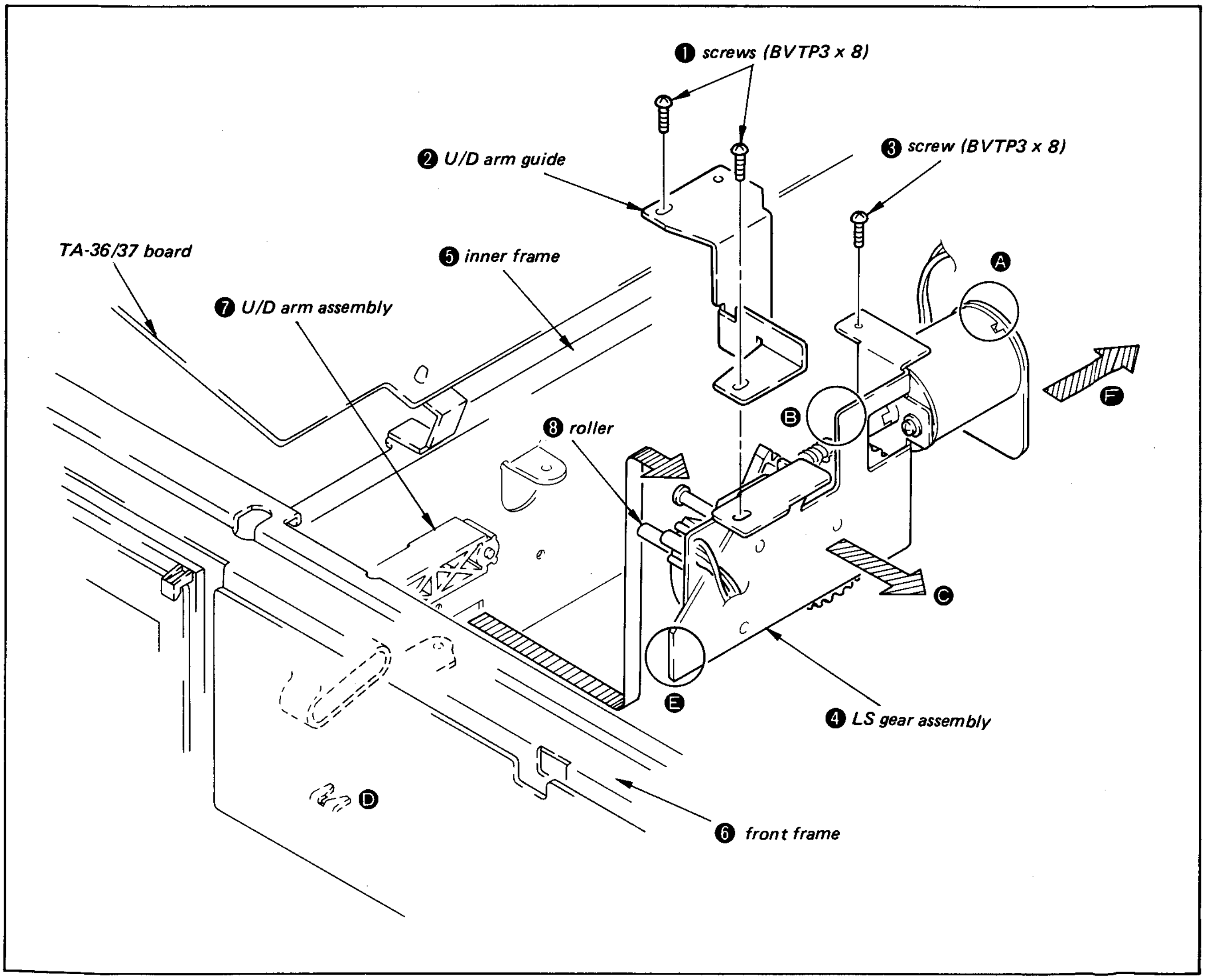

shuttle guide 1-YA
tape guide pin
tension regulating lever assembly
pin
shuttle guide 2
adjustment screw
adjustment screw
S reel
Ⓐ
chassis hole
tension regulating band assembly
Ⓐ

Fig. 3-28

3-11. REMOVAL AND INSTALLATION OF LS GEAR

3-11-1. Removing LS Gear

1) Open the TA-36/37 board.
2) Remove two connectors (CN106 and CN109).
3) Remove two screws (BVTP3 x 8) ① and remove U/D arm guide ②.
4) Remove one screw (BVTP3 x 8) ③.
5) Hold LS gear assembly ④ at part Ⓐ with forefinger and part Ⓑ with thumb.
6) Move LS gear assembly ④ in arrow Ⓒ direction and pull two shafts of LS gear assembly ③ from inner frame ⑤.
7) Pull the leading end Ⓔ of LS gear assembly ④ from the notch Ⓓ of front frame ⑥, and remove roller ⑧ from U/D arm assembly ⑦.
8) Lift LS gear assembly ④ while pulling in arrow Ⓕ direction.



① screws (BVTP3 x 8)
② U/D arm guide
③ screw (BVTP3 x 8)
TA-36/37 board
⑤ inner frame
⑦ U/D arm assembly
Ⓐ
Ⓑ
⑧ roller
Ⓕ
Ⓒ
Ⓔ
④ LS gear assembly
Ⓓ
⑥ front frame

Fig. 3-29

3-11-2. Refitting of the U/D Arm Assembly

1) Insert inner frame shaft ❷ in the hole of U/D arm assembly ❶.
2) Push U/D arm assembly ❶ in arrow Ⓐ direction until its roller ❸ and protrusion ❹ are inserted into two holes of the inner frame.

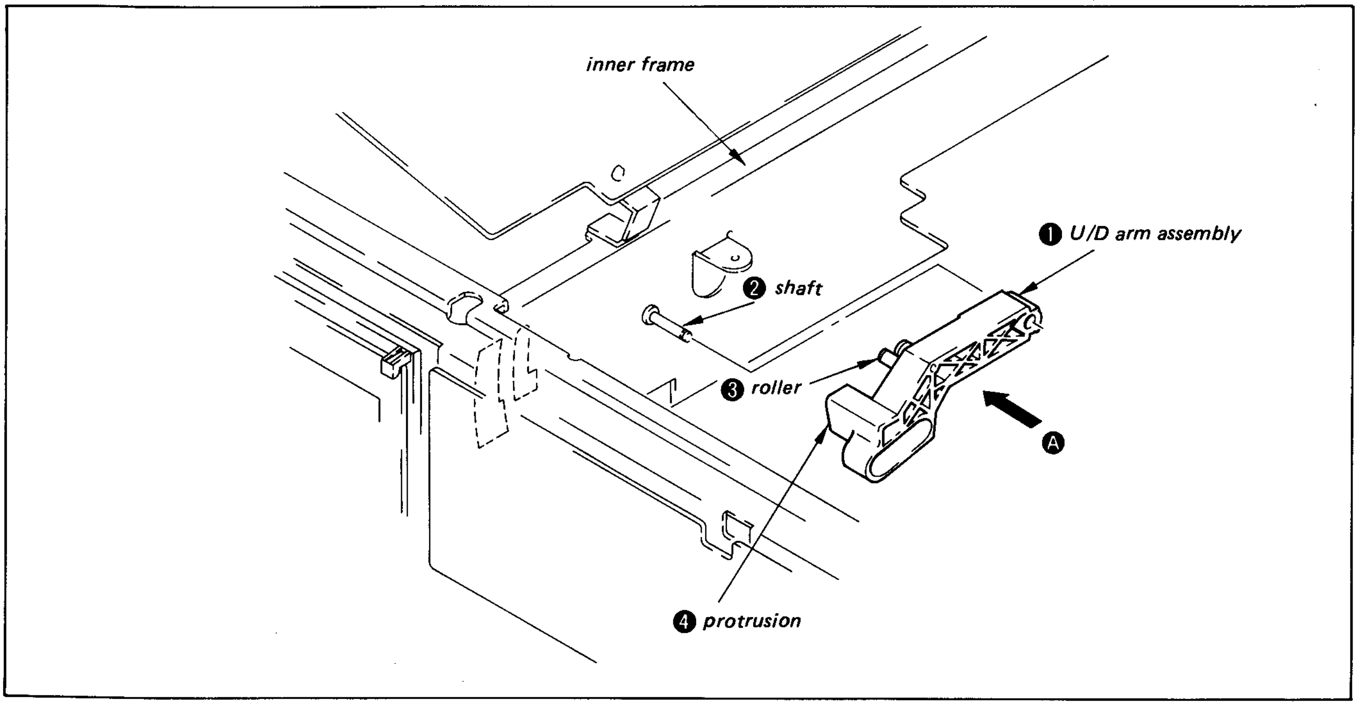

inner frame
❶ U/D arm assembly
❷ shaft
❸ roller
Ⓐ
❹ protrusion

Fig. 3-30

3-11-3. Adjustment of the Position of the LS Gear Assembly

Set the protrusion ❷ of LS gear assembly ❶ to the lowest pattern of US-1 board ❸.

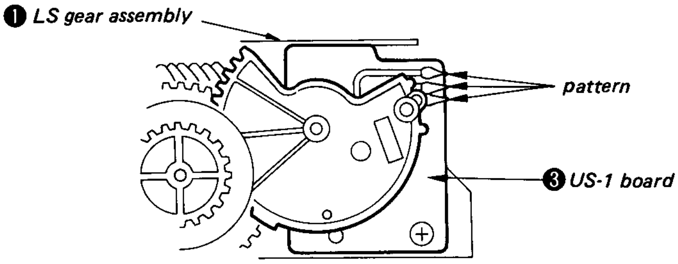

❶ LS gear assembly
pattern
❸ US-1 board

Fig. 3-31

3-11-4. Installation of LS Gear Assembly

1) Hold LS gear assembly ❶ at parts Ⓐ and Ⓑ, and place it in arrow Ⓒ direction into the set, avoiding the SS-50 board, rise ❹ and U/D arm assembly ❸.
2) Place part Ⓓ of LS gear assembly ❶ on the rise ❹ of the front frame, and place part Ⓔ of LS gear assembly ❶ on the rise ❷ of the middle frame.
3) Insert roller ❺ into the long hole of U/D arm assembly ❸, and insert part Ⓕ of LS gear assembly ❶ into notch ❻ of the front frame.
4) Insert shaft ❼ and the gear center shaft ❽ into the holes of the middle frame respectively, and install LS gear assembly ❶ by pushing in arrow Ⓖ direction.

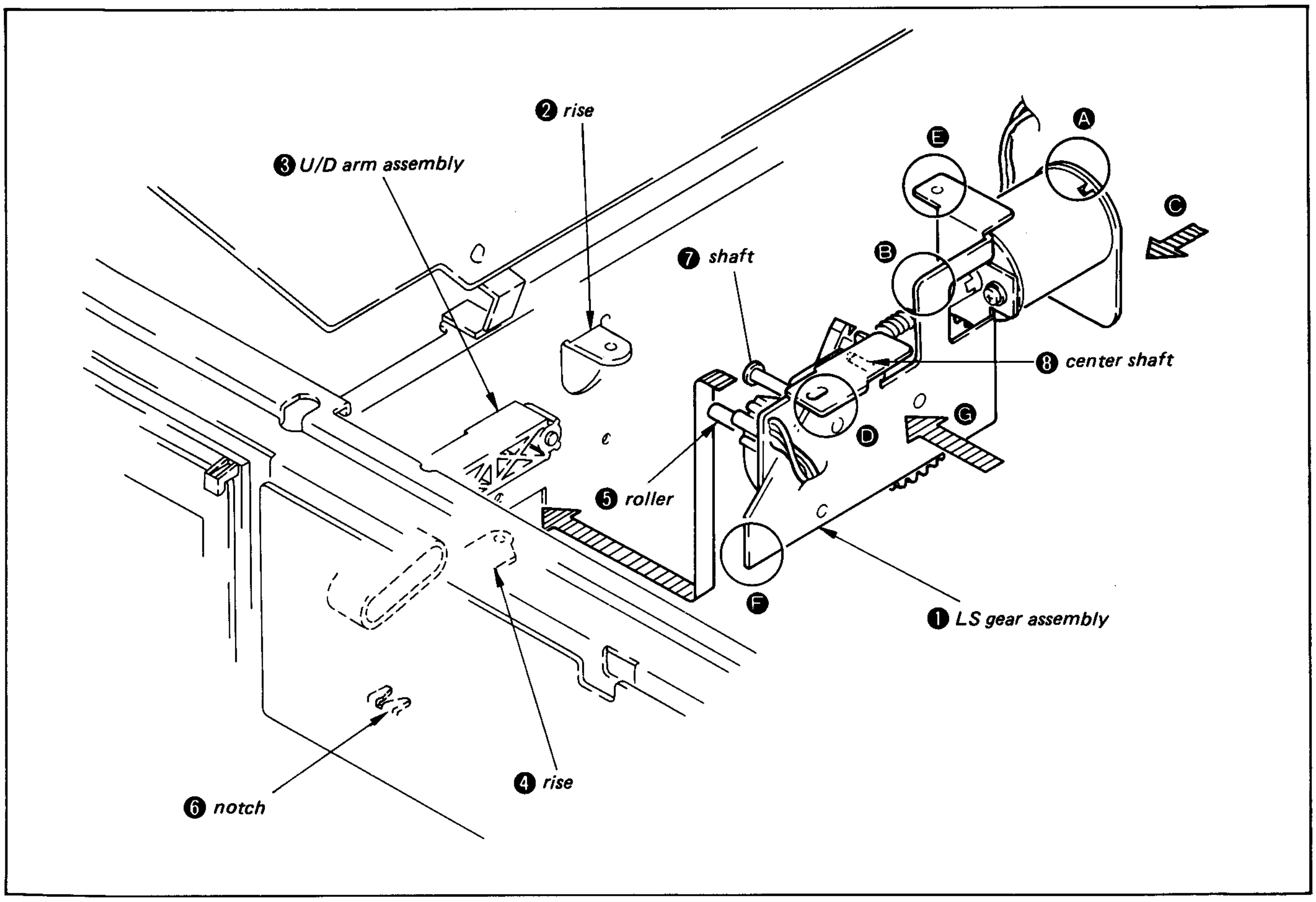

❷ rise
❸ U/D arm assembly
Ⓔ
Ⓐ
Ⓒ
❼ shaft
Ⓑ
❽ center shaft
Ⓓ
Ⓖ
❺ roller
Ⓕ
❶ LS gear assembly
❹ rise
❻ notch

Fig. 3-32

3-12. ADJUSTMENT OF THE FORWARD BACK TENSION

[Method of measurement]

1) Insert the torque cassette (SL-0003C) and put the unit in playback mode.
2) Read the value on the meter on the S reel side after the needle has gone around about once.
   The correct value is 44 ±4 g·cm.

Notes:

i) The set must be perfectly level during this measurement.

ii) After the measurement, the tape can become slack when the stop button is pressed. If this happens set the unit is forward mode to take up the slack before removing the tape.

[Method of adjustment]

Move the position of the tension coil spring that is hooked on the tension regulating lever assembly in the direction of arrow Ⓐ unit the measured value falls within the correct range.

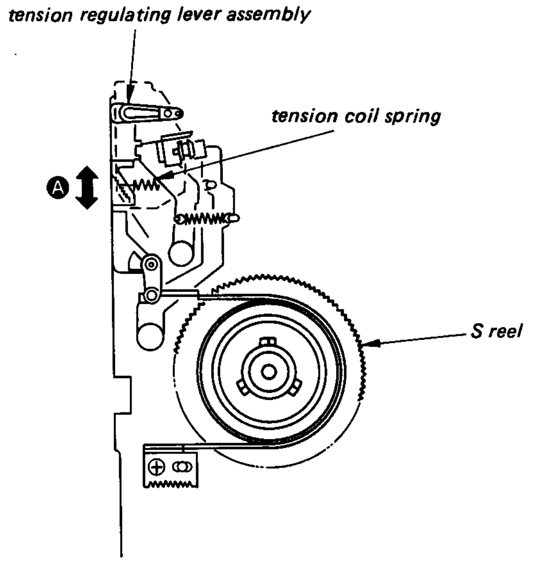
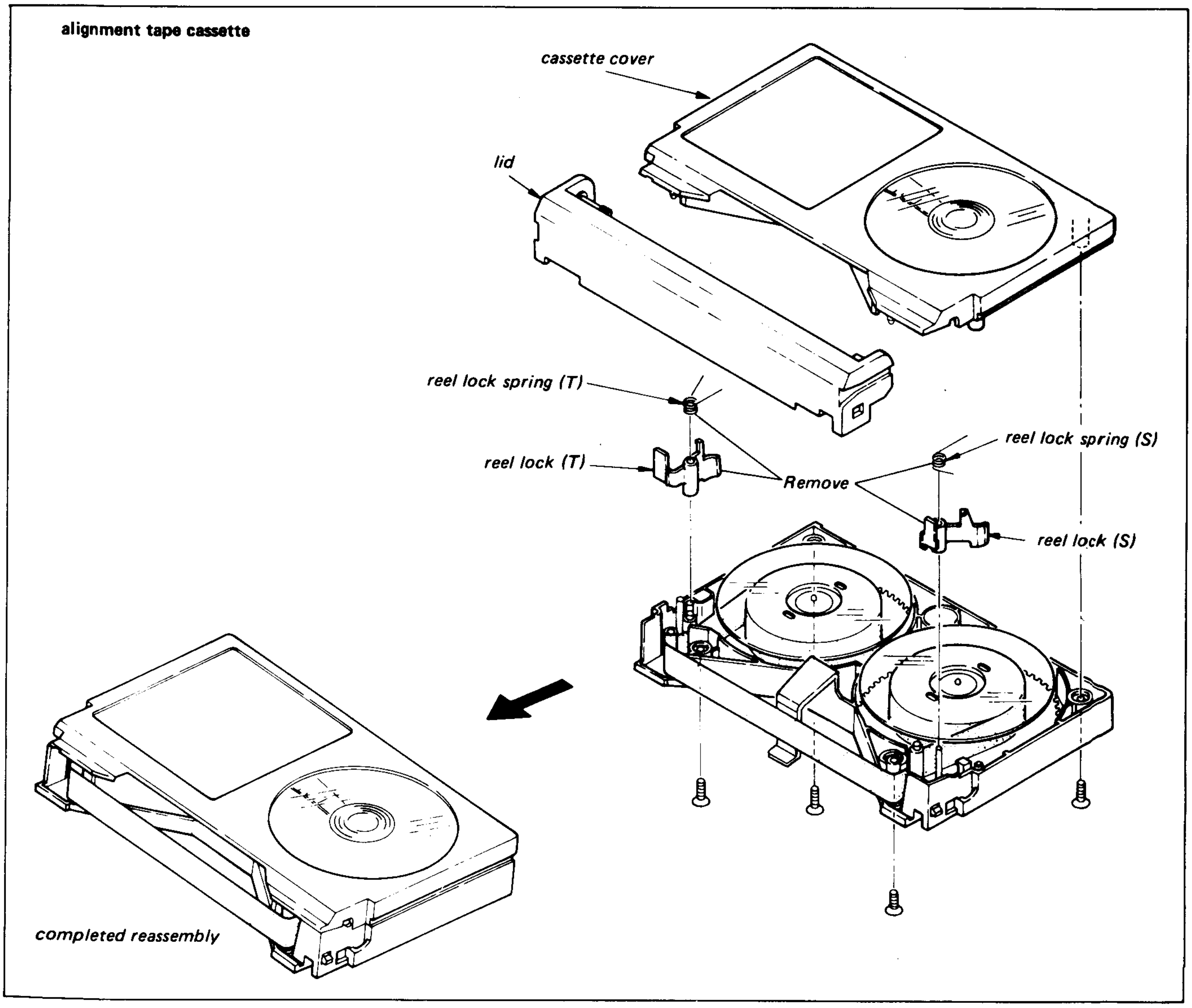


Fig. 3-33 Adjustment of the back tension

4. TAPE PATH ADJUSTMENT

4-1. TRACKING ADJUSTMENT

This adjustment has significant effect on picture quality in each mode and tape interchangeability, so please perform it very carefully.

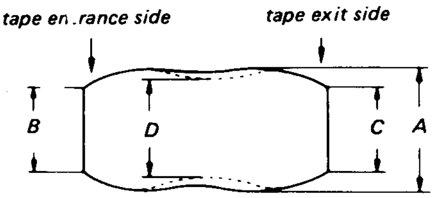


alignment tape cassette
cassette cover
lid
reel lock spring (T)
reel lock (T)
Remove
reel lock spring (S)
reel lock (S)
completed reassembly

Fig. 4-1 Cassette Holder Remodeling

4-1-1. Preparation

1) When modifying alignment tape KR5-2H, use caution not to dislodge the tape reels from their correct position. Refer to Fig. 4-1 and remove the four screws that secure the upper cover to the lower cover.
   Remove the upper cover and lid. Separate the lid and lid tension spring from the upper cover. Remove the two reel lock springs (T and S) and the two reel locks (T and S). Remount only the upper cover, being certain that it is properly mated with the lower cover. Secure the covers with four screws. NOTE — If the reel locks, and related springs are not removed from the cassette, the tape will load but will not thread. In this case the cassette will be ejected from the VTR approximately eight seconds after being loaded into the VTR.
2) Clean the tape contact surfaces (tape guides, drum, capstan shaft, pinch roller, ACE FE head surface) with chamois dampened with methanol.
3) Oscilloscope connections:
   1ch: CN703 . . . 3 pin (RP-31 board)
   2ch: CN703 . . . 2 pin (RP-31 board)
4) Play back the tracking portion of the modified alignment tape.
5) Confirm that the RF output waveform is flat, with maximum amplitude. (The waveform should increase and decrease, remaining flat, when the tracking control knob is turned back and forth.) Also, when the waveform is maximum, confirm that the RF output waveform variation and contact satisfy the specifications shown in Fig. 4-2. If they do not, follow the instructions in 6).
6) If the tracking control knob is turned and the entrance waveform does not flatten as shown in Fig. 4-3(a), perform the entrance side adjustment in 4-1-2. If the exit waveform does not flatten as shown in Fig. 4-3(b), perform the exit side adjustment in 4-1-3.


tape en.rance side
tape exit side
B
D
C
A

Specifications: Tracking Control Knob at Maximum

contact: $\frac{B}{A} \geqq 0.7$

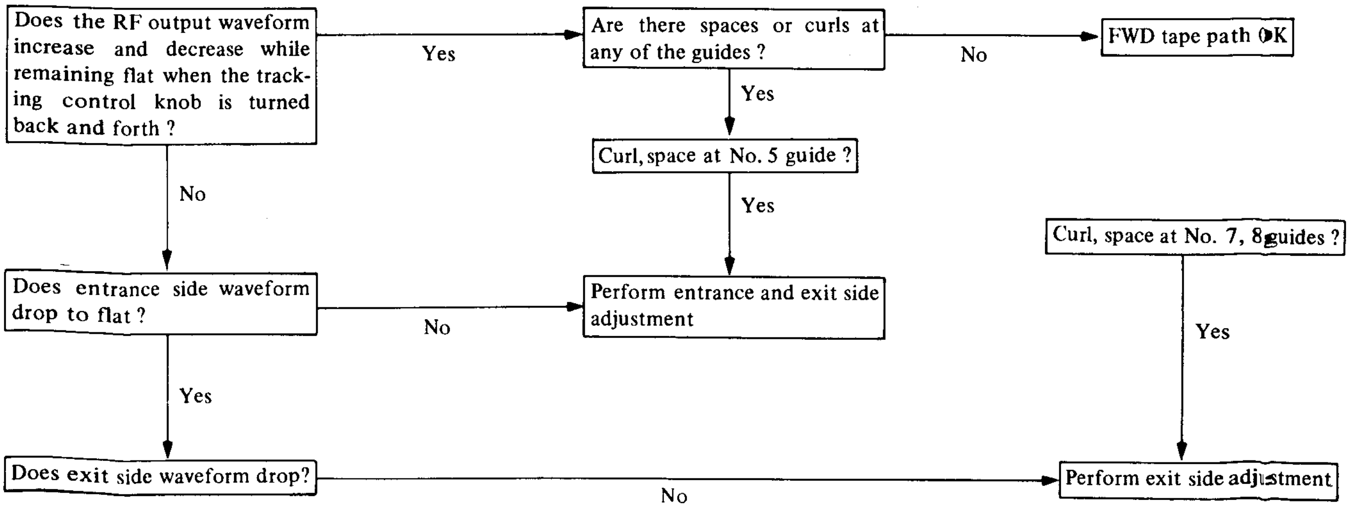
$\frac{C}{A} \geqq 0.7$

Variation: $\frac{D}{A} \geqq 0.9$

Fig. 4-2

	BOARD	CONNECTOR & PIN NO.
RF Output Waveform	RP-31	CN703 . . . 3
External Trigger	RP-31	CN703 . . . 2
Audio Out	TA-36/37	CN901 . . . 1
Video Out	YC-40	VIDEO OUT

Waveform Confirmation


Does the RF output waveform increase and decrease while remaining flat when the tracking control knob is turned back and forth ?
Yes
Are there spaces or curls at any of the guides ?
No
FWD tape path OK
Yes
Curl, space at No. 5 guide ?
Yes
Perform entrance and exit side adjustment
No
Does entrance side waveform drop to flat ?
No
Yes
Does exit side waveform drop?
No
Curl, space at No. 7, 8 guides ?
Yes
Perform exit side adjustment

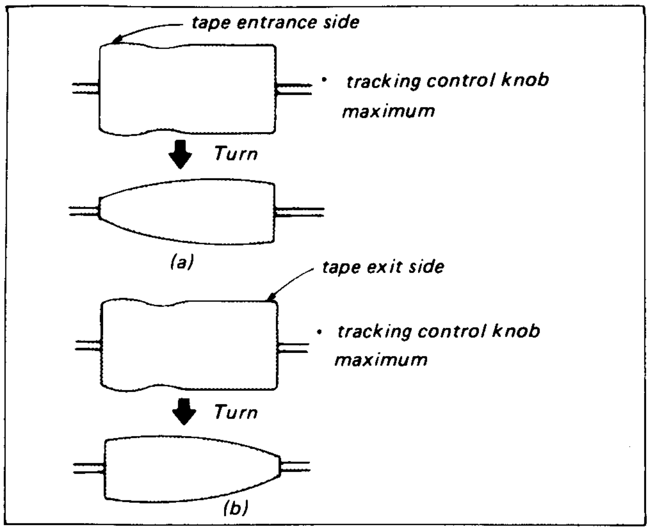

tape entrance side
• tracking control knob maximum
Turn
(a)
tape exit side
• tracking control knob maximum
Turn
(b)

Fig. 4-3

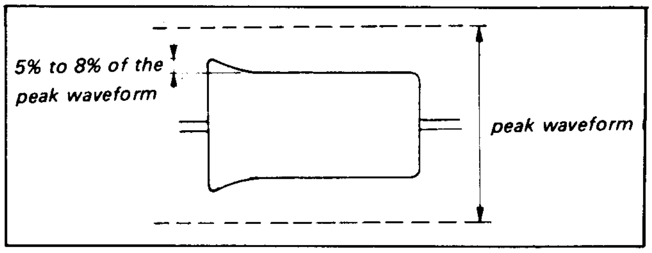
Note:

After the indicated tape path adjustments that follow have been successfully completed using normal playback speed, operate the VTR in the Speed Search mode and look for curl at the tape guides. Readjust them if necessary. Then finally, playback a regulator L830 tape as a check-up. See Section 4-4.

4-1-2. Entrance Side Adjustment

Always perform the exit side adjustment as well as the entrance side adjustment, Fig. 4-4 illustrates the guides and adjustment locations.

1) Turn tracking control knob counterclockwise to drop RF output waveform to about 60% of maximum
2) Turn no. 6 guide counterclockwise to free tape transportation to the drum. Use a special notched screwdriver. (See section 1-8. Tools and Fixtures Required.)
3) Loosen no. 5 guide lock screw ❶, turn no. 5 guide so that the entrance side waveform is almost flat, as shown in the figure below, and tighten lock screw ❶. (See Fig. 4-5)

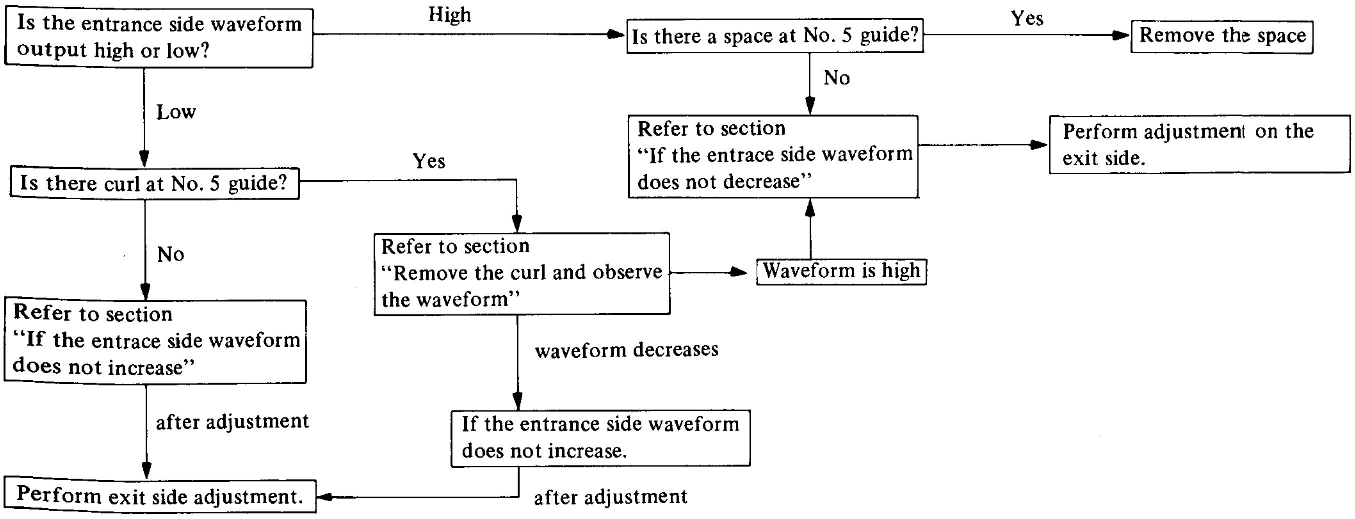

5% to 8% of the peak waveform
peak waveform

Note:
Be sure that the waveform remains as shown in the figure after tightening the lock screw ❶.

4) Next lower no. 6 guide and flatten the waveform.
5) Push the tape down between no. 4 and no. 5 guides by hand, and confirm that the entrance side RF waveform returns to the original state after being lowered. If the waveform is not as illustrated, or if the waveform does not flatten, or takes too much time to flatten after the entrance side tape is pushed down, follow the procedure below to adjust.
6) Check no. 5 guide for space and curl. If space or curl exists, follow the appropriate adjustment procedure.

Note:
Be sure that there is tape tension uppper and lower balance between no. 3 – no. 4 – no. 5 guides. Perform no. 3 or no. 5 guide lateral adjustment if necessary.

Entrance Side Flow Chart


Is the entrance side waveform output high or low?
High
Is there a space at No. 5 guide?
Yes
Remove the space
No
Refer to section "If the entrace side waveform does not decrease"
Perform adjustment on the exit side.
Low
Is there curl at No. 5 guide?
Yes
Refer to section "Remove the curl and observe the waveform"
Waveform is high
No
Refer to section "If the entrace side waveform does not increase"
waveform decreases
If the entrance side waveform does not increase.
after adjustment
Perform exit side adjustment.
after adjustment

Note:
Upon failing to obtain the waveforms shown above, press down the tape at the entrance side, adjust as indicated below when a long time is needed for the waveform to return to the horizontal, or when it does not return at all.

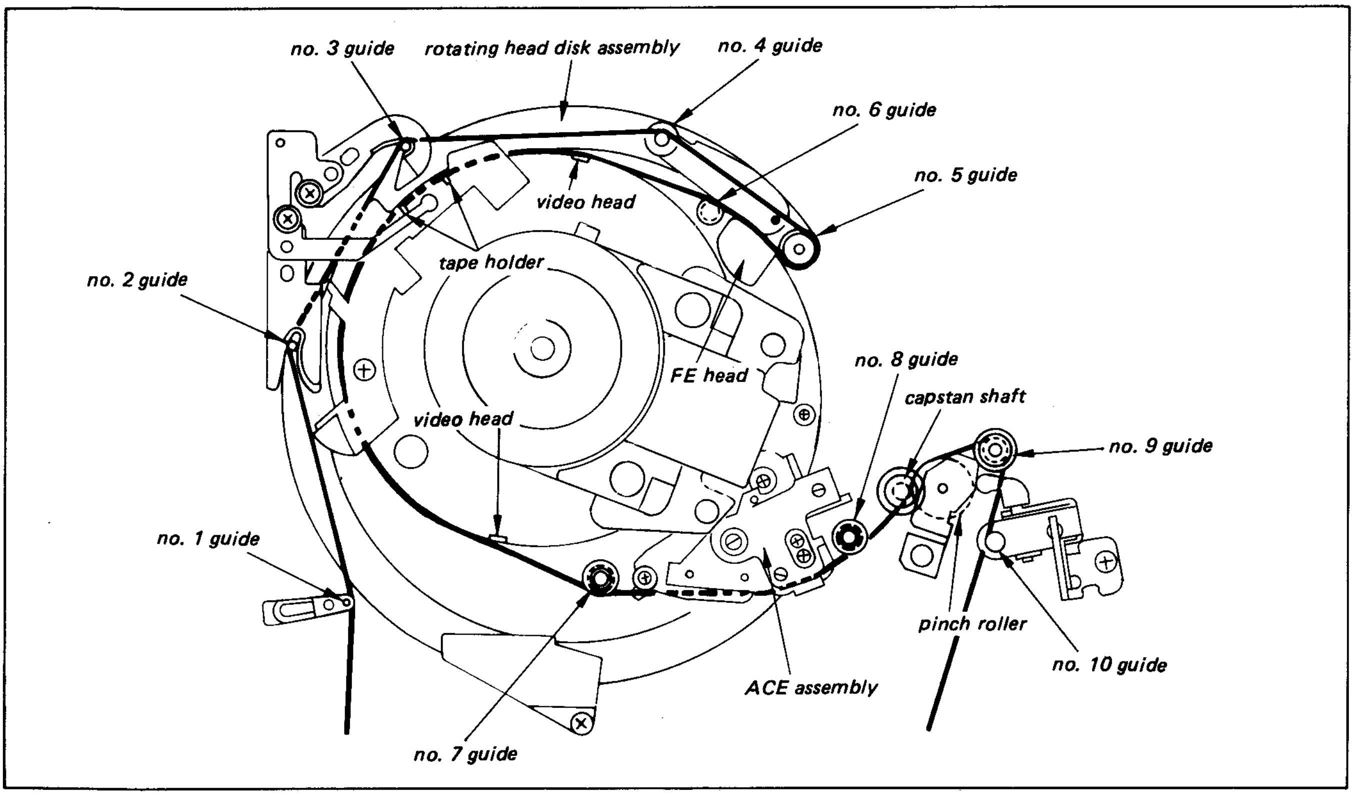

no. 3 guide
rotating head disk assembly
no. 4 guide
no. 6 guide
no. 5 guide
video head
tape holder
no. 2 guide
FE head
no. 8 guide
capstan shaft
no. 9 guide
video head
no. 1 guide
pinch roller
no. 10 guide
ACE assembly
no. 7 guide

Fig. 4-4 Tape Guide Layout

[If the waveform entrance output does not increase]

1) Check to make sure tape upper and lower tension is equal between no. 3 – no. 4 – no. 5 guides. If it is not, perform no. 3 or no. 5 guide lateral adjustment.
   Note:
   Be sure there is no space at no. 4 guide lower flange.
2) Raise no. 4 guide lower flange to raise entrance output.
   Note:
   No. 4 guide lower flange may be raised 0.4 mm from its lowest position.
3) If the waveform does not increase in step 2), turn no. 5 lateral adjustment screw slightly (less then 360°) counterclockwise.

[If the waveform entrance output does not decrease]

1) Move the no. 3 guide adjust plate away from the drum, and tighten screw ❷ at the point just before the lower tension of the tape loosens.
2) If the tape is touching no. 4 guide lower flange, lower the flange. If it is floating, adjust no. 5 guide laterally.

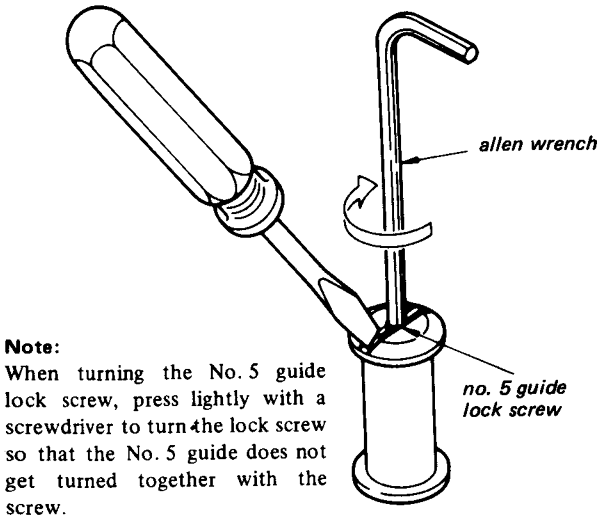
[If there is space at no. 5 guide]

Turn no. 4 guide counterclockwise to raise the tape and remove the space at no. 5 guide.

Note:
Be careful not to create a large space at the bottom of no. 4 guide.

[If there is curl]

1) When there is a space at the bottom of no. 4 guide:
   Lean the adjust plate of no. 3 guide toward the outside until the point just before the lower tape tension loosens.
2) When there is curl but no space at the bottom of no. 4 guide:
   i) Confirm that no. 4 guide is not raised too high. Turn clockwise to lower if necessary.
   ii) If this does not slove the problem, tighten no. 5 guide lateral adjustment screw by turning clockwise until the curl disappears.



Note:
When turning the No. 5 guide lock screw, press lightly with a screwdriver to turn the lock screw so that the No. 5 guide does not get turned together with the screw.

Fig. 4-5

4-1-3. Exit Side Adjustment

1) Turn the tracking control knob counterclockwise to lower the RF output waveform to about 60% of the maximum.
2) Raise no. 7, 8 guides to free the tape transportation, and check the waveform. (This waveform is called "exit free waveform".)

Note:
Be careful not to raise the guides too much. They should be raised about 0.3 mm, and also, the tape should not touch the ACE head bottom flange. (Fig. 4-6)

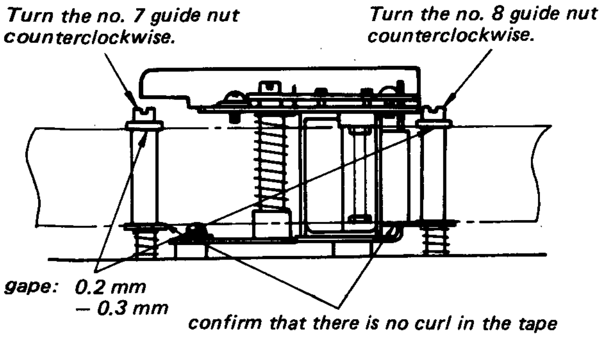

Turn the no. 7 guide nut counterclockwise.
Turn the no. 8 guide nut counterclockwise.
gape: 0.2 mm – 0.3 mm
confirm that there is no curl in the tape

Fig. 4-6

   i) If the exit free waveform is within the range illustrated in Fig. 4-7 (a), (b), proceed with exit side adjustment.
   ii) If it is not within the specified range, follow the adjustment procedure in 4-3.

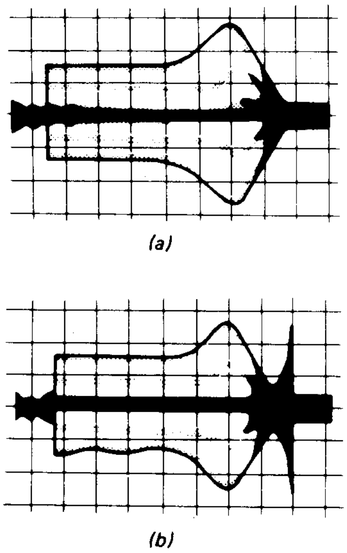


Fig. 4-7

3) Flatten the waveform with no. 7 guide, and match no. 8 guide to the tape. (Lower the guide to the point just before the waveform changes, and where there is no curl.) At this time, the exit side waveform may rise slightly, so lower no. 7 guide again to flatten it, and match no. 8 guide to the tape.
4) Confirm that there is no curl at no. 7, 8 guides in forward mode.
5) Confirm that curl and space do not appear at no. 8 guide in reverse mode. If curl or space appears, adjust with no. 9 guide.

4-2. ADJUSTMENT AFTER REPLACEMENT OF THE ACE ASSEMBLY

Perform the following adjustments after removing or replacing the ACE assembly.

4-2-1. Tracking Adjustment

1) Position the parallel plate (Fixture, SL-0657) at shown in Fig. 4-8, and turn audio head lateral adjustment screw ❶ to adjust the audio head vertically.

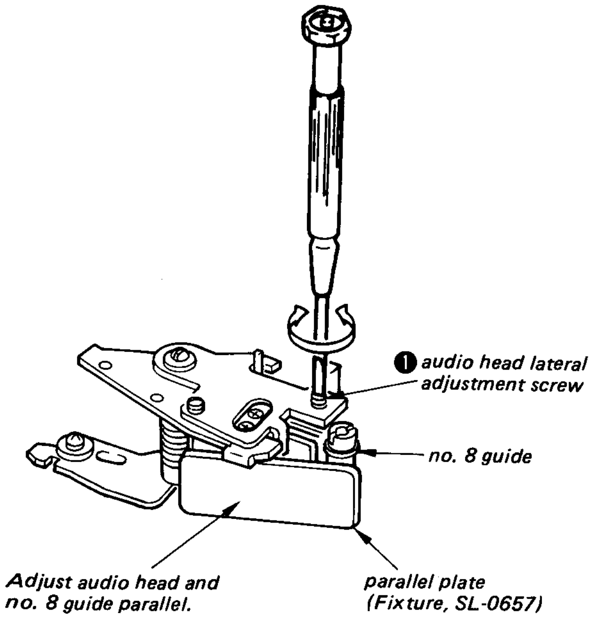

❶ audio head lateral adjustment screw
no. 8 guide
Adjust audio head and no. 8 guide parallel.
parallel plate (Fixture, SL-0657)

Fig. 4-8

2) Turn the tracking control knob counterclockwise to lower the RF output waveform to about 60% of the maximum.
3) Play back the tracking portion of the alignment tape raise no. 7, 8 guides about 0.3 mm and check the exit free waveform of the RF output waveform.

   Note:

   Be sure that the tape does not touch the bottom flange of the ACE assembly.

   i) If the waveform is within the range illustrated in Fig. 4-7 (a), (b), proceed with the adjustment.
   ii) If the exit free waveform appears as shown in Fig. 4-9, turn the ACE lateral adjustment screw clockwise until the waveform is within the range illustrated in Fig. 4-7 (a), (b).
   iii) If the exit free waveform appears as shown in Fig. 4-10, turn the ACE lateral adjustment screw counterclockwise to obtain the waveform shown in Fig. 4-9, then turn clockwise again until the waveform is within the range shown in Fig. 4-7.

4) Turn the no. 7 guide to flatten the waveform, and match the no. 8 guide to the tape. (Lower the guide until the point just before curl appears at no. 8 guide flange.)
5) If the RF output waveform is as shown if Fig. 4-9, where the exit side is not flat, lower no. 7, no. 8 guides again to flatten it.

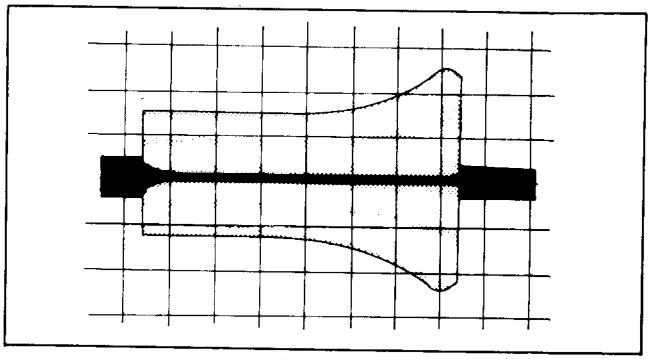


Fig. 4-9

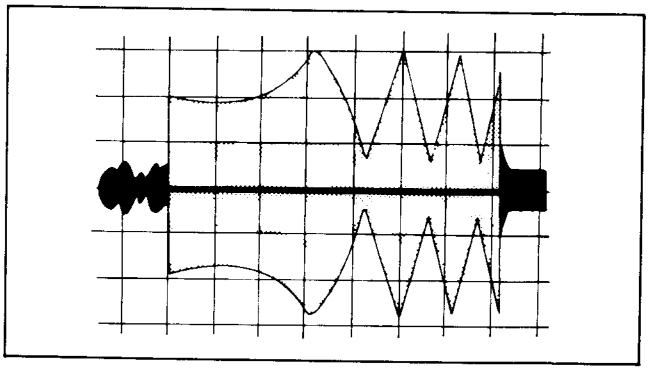


Fig. 4-10

4-2-2. Audio Head (ACE Assembly) Azimuth Adjustment

1) Connect the oscilloscope as follows:
   CN901 . . . 1 pin (TA-36/37 board)
   Play back the 5 kHz portion of the alignment tape.
2) Turn the azimuth adjustment screw (Fig. 4-11) so that the amplitude of the 5 kHz waveform is maximum.

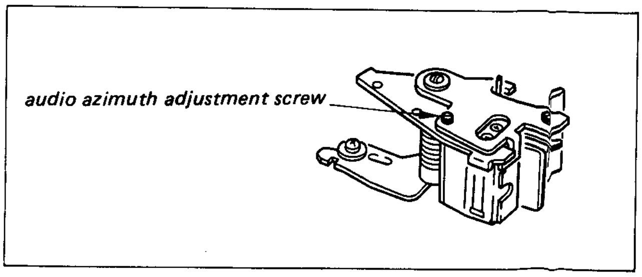


Fig. 4-11

4-2-3. CTL Head (ACE Assembly) Position Adjustment

This adjustment is both mechanical and electric: mechanically, it is the adjustment of the CTL head position, and electrically, it is the tracking control center adjustment. The procedure involves performing the electrical adjustment first, then the head position adjustment.

1) Connect the oscilloscope as follows:

1ch	CN703 . . .	3 pin (RP-31 board)
2ch	CN901 . . .	1 pin (TA-36/37 board)
External trigger:	CN703 . . .	2 pin (RP-31 board)

2) Play back the tracking portion of the alignment tape.
3) Turn the tracking control knob back and forth, and confirm that the output waveform level is maximum at the center click position, and that the 0 level of the audio signal is at the point where the RF output waveform Bch waveform appears, as shown in Fig. 4-12.
   If adjustment is necessary, proceed as follows.

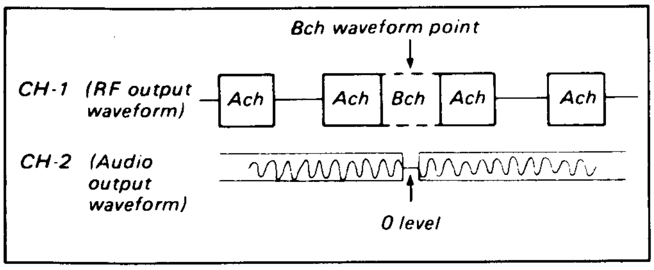

Bch waveform point
CH-1 (RF output waveform)
Ach
Ach
Bch
Ach
Ach
CH-2 (Audio output waveform)
0 level

Fig. 4-12

4) Tracking Control Center Adjustment
5) CTL Head Position Adjustment
   Set the tracking control knob at the center detent position and loosen the two ACE assembly position adjustment screws ①. As shown in Fig. 4-13 slide the ACE assembly with a screwdriver until it is in the position shown in Fig. 4-12 and the RF output waveform is maximum. Tighten the screws ① when this position is obtained.
6) Replay the color bars of the alignment tape and check the picture quality.

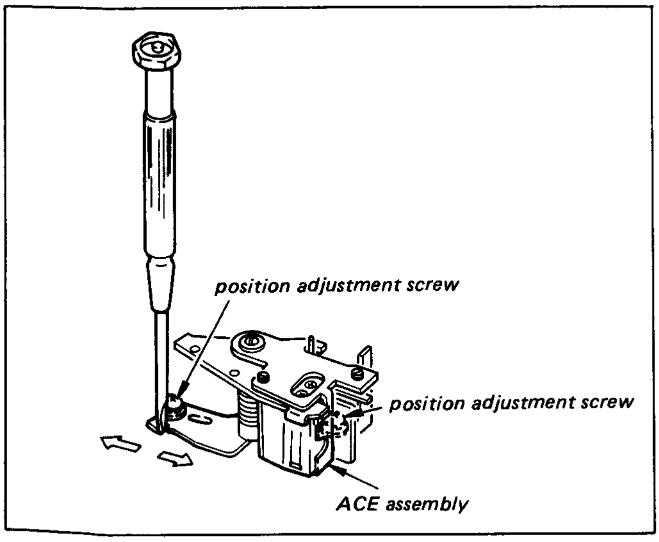

position adjustment screw
position adjustment screw
ACE assembly

Fig. 4-13

4-2-4. Audio Head (ACE Assembly) Height Adjustment

Perform this adjustment only after completing the exit side tracking adjustment.

1) Oscilloscope connection:
   1ch: CN901 . . . 1 pin (TA-36/37 board)
   Replay the 5 kHz portion of the alignment tape.
2) Turn the audio head height adjustment screw ① and the lateral adjustment screw ② (Fig. 4-14) until the audio output waveform amplitude is maximum.

Note:

Both of these adjustment screws should be turned in the same direction at the same angle, less then 30°.

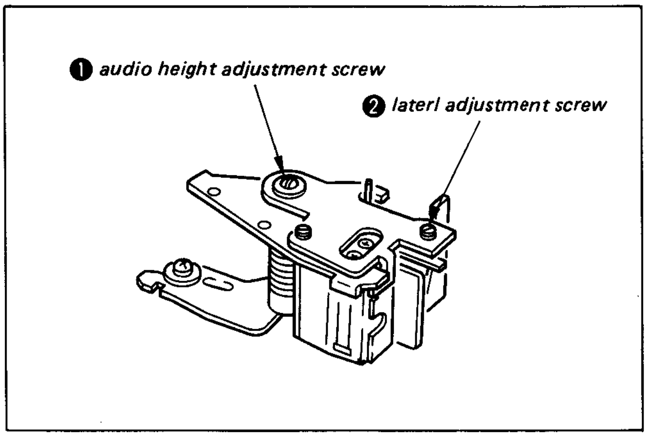
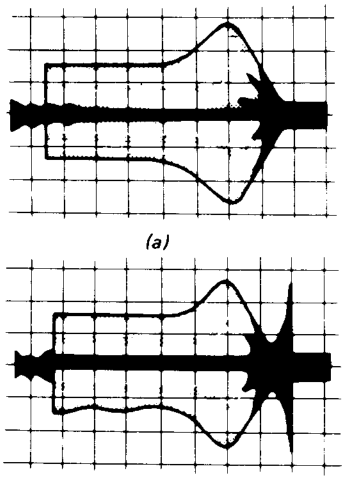

❶ audio height adjustment screw
❷ laterl adjustment screw

Fig. 4-14

4-3. ADJUSTMENT AFTER REPLACEMENT OF THE CAPSTAN MOTOR

1) Perform the vertical adjustment of the capstan shaft according to 3-6. Replacement and Adjustment of Capstan Motor.
2) Play back the tracking portion of the alignment tape. Connect the oscilloscope as follows:
   1ch: CN703 . . . 3 pin (RP-31 board)
   2ch: CN703 . . . 2 pin (RP-31 board)
3) Turn the tracking control knob clockwise to lower the RF output waveform to about 60% of the maximum.
4) Raise No. 7, 8 guides a little, and check the exit free waveform.
   i) If the exit free waveform is within the range indicated in Fig. 4-15(a), (b), proceed from step 5).


(a)

(b)

Fig. 4-15

   ii) If the peak of the exit free waveform is smaller than that illustrated in Fig. 4-15(a) (e.g. Fig. 4-16), loosen the lock screw, then turn the capstan adjustment screw until the waveform is within the specified range.

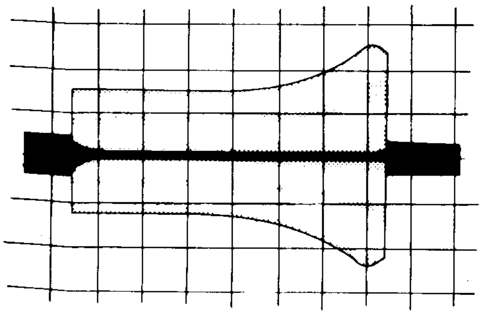


Fig. 4-16

   iii) If the peak shape of the exit free waveform differs from that shown in Fig. 4-15(b) (e.g. Fig. 4-17), loosen the lock screw, then turn the capstan adjustment screw clockwise until the waveform is within the specified range.

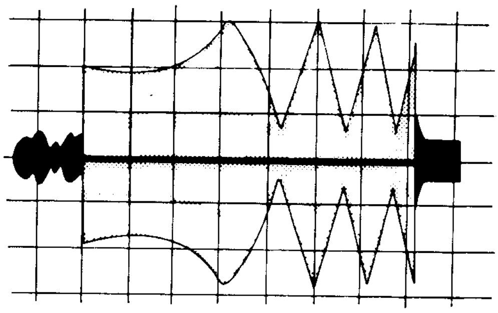


Fig. 4-17

Note:
After turning the capstan adjustment screw wait until the waveform stabilized (about 10 – 15 seconds) before continuing with the adjustment.

5) Lock the capstan lock screw. (Turn clockwise until is stops, then turn about 30° more. At this point, the exit free waveform will change slightly, and if it goes out of the range shown in Fig. 4-15(a), (b) return to step 4) and re-adjust.
6) Flatten the waveform with No. 7 guide, and match No. 8 guide to the tape. If the exit waveform rises, flatten it again with No. 7 guide and match No. 8 guide to the tape again.
7) Confirm and adjust according to 4-1-3, exit side adjustment procedure items 4), 5).

Note:
Check with L830 tape.

4-4. THIN TAPE MOVEMENT CHECK METHOD DURING TAPE PATH ADJUSTMENT

After confirming the tape path by using the procedures of section 4-1 through 4-3, check the thin tape movement by the procedure given below.

1) Prepare one reel of the commercial L-830. Remove the cassette lid with reference to Fig. 4-1.
2) Run L-830 prepared in the procedure 1 in the PLAY mode and check the following points;
   i) Entrance side
   Check if the tape bends and is damaged on the no. 4 guide bottom flange, the no. 5 guide top flange and the no. 6 guide top flange. (The curl of the tape is allowed), but the bend of the tape is not allowed.) (Fig. 4-18)

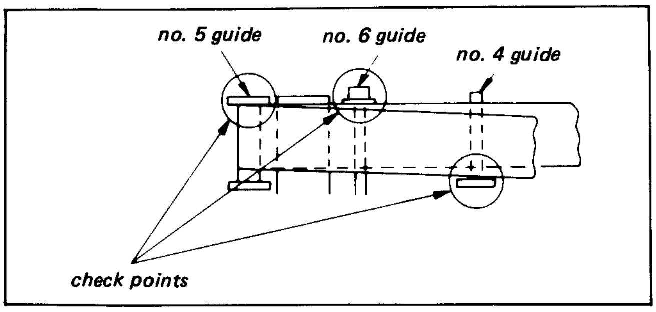


Fig. 4-18

   ii) Exit side
   Check if the tape bends and is damaged on the no. 7 guide top flange, the no. 8 guide top lange and the no. 10 guide top and bottom flanges. (The curl of the tape is allowed, but the bend of the tape is not allowed.) (Fig. 4-19)

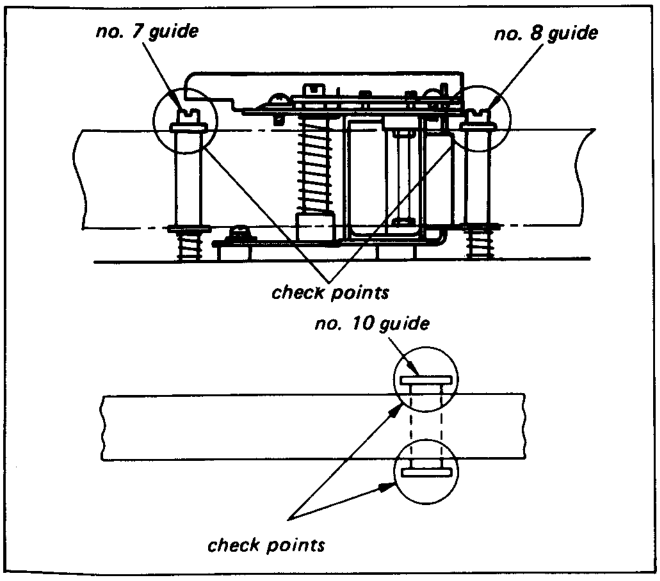
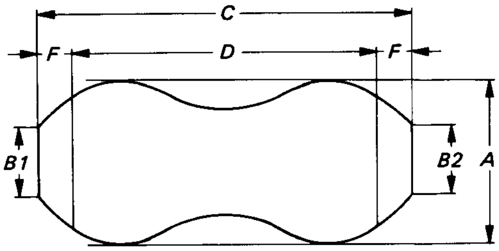


Fig. 4-19

3) If the tape did not run normally in step 2, readjust the tape path by using.
   a) The tape did not run normally on the entrance side, refer to 4-1-2.
   b) The tape did not run normally on the exit side, refer to 4-1-3.

4-5. BETA HI-FI RF OUTPUT WAVEFORM CHECK

1) Set the BETA HI-FI RECORD button inside the front door to the SOUND side.
2) Set both REC slide knobs L and R of the REC level meter to "0".
3) Record in a no-signal state.
4) Play back the recorded part and check that the RF output satisfies the conditions described in Fig. 4-20. (Operate this procedure for both Ach and Bch)



$B1 \geqq 0.8A$
$B2 \geqq 0.8A$
The output of the range D
shall be more than 0.85A
(provided $D \geqq 0.8C$, $F \leqq 0.1C$)

Note: Tracking control knob is at the center click position.

Fig. 4-20

	BOARD	CONNECTOR, TP & PIN No.
RF Output Waveform (Ach)	AF-14	CN002 . . . 1P
RF Output Waveform (Bch)	AF-14	CN002 . . . 2P
External Trigger	AF-14	CN002 . . . 4P

5. ELECTRICAL ADJUSTMENTS

All the electrical adjustment can be performed by using the equipment mentioned below, the alignment tape, and the PAL colour-bar signal (100%).

[Equipment Required]

(1) PAL Colour Monitor TV
(2) Oscilloscope, Dual-trace, Bandwidth ... more than 10 MHz with delay mode
(3) Frequency Counter
(4) PAL Colour-Bar Generator
(5) Digital voltmeter
(6) VOM (20 kΩ/V)
(7) Audio Signal Generator
(8) Audio level meter (VTVM)
(9) Attenuator
(10) Spectrum analyzer
(11) Alignment Tape, type: KR5-2H, Code No. 8-969-995-52
KR5-10C, Code No. 8-192-508-01
(12) Alignment Tool (Adjusting screwdriver for semi-fixed resistors and coils)
Jig No. SL-0001, Code No. J-6080-001-A

[Setup for Adjustment]

The antenna should be connected correctly to the antenna input terminal of the videocassette recorder.

It is important that the video output signal satisfies the specification because the telecast signal received by the incorporated tuner of the videocassette recorder is utilized as the adjustment signal of the machine. The incorporated tuner should be set to the channel with the best reception. The video signal should be checked with an oscilloscope connected to VIDEO OUT (BNC connector). Verify that the sync signal amplitude is approx. 0.3 Vp-p and the video signal amplitude is approx. 0.7 Vp-p at peak. Adjust the fine tuning while observing the signal and the TV screen so that the burst signal amplitude becomes approx. 0.3V ± 0.1 Vp-p. Also confirm that there is not spikes observed at the sync signal portion. (See Fig. 5-1.)

The video (colour-bar) signal for the adjustment is shown in Fig. 5-1.

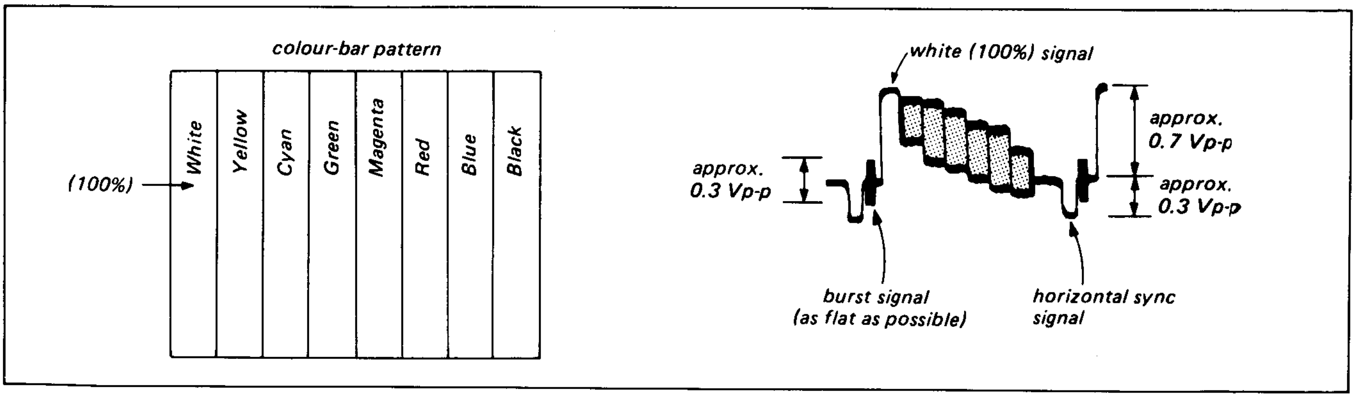


Fig. 5-1. Video (colour-bar) signal

[Alignment Tape]

KR5-2H

	Video signal	Audio signal	Playing time	Use for
1.	Colour-bars	3 kHz – 5 dB	5 min	General performance, tape speed checks, switching position adjustment.
2.	Monoscope	333 Hz – 25 dB	5 min	Video head dihedral, audio level adjustment.
3.	RF sweep	5 kHz – 25 dB	5 min	Video, audio frequency characteristics, audio azimuth adjustment. marker: 1, 2, 3.58, 4.5, 5.2 MHz
4.	Tracking 1 MHz (CH-B) *1 (Channel B is inserted in every 3 frames.)	1 kHz – 5 dB *2 (Signal is dropped out in the positions where channel B is inserted.)	5 min	Tracking, Audio height adjustments CTL Position check. (Check if *1 and *2 are the same position.)

KR5-10C (Beta hi-fi Audio)

	Video signal	Audio signal	Playing time	Use for
	Colour-bars	Beta hi-hi 400 Hz ±66.7 kHz DEV	30 min	Beta hi-fi Audio level, balance adjust ment.

[Alignment Tool for Semi-fixed Variable Resistors and Coils]

Semi-fixed variable resistors and inductances should be adjusted with the alignment tool exclusively prepared for the adjustment of the components. A common screwdriver is too large for adjusting the components from the conductor side of a printed circuit board.

The metal blade of the alignment tool is used for variable resistors and trimmer capacitors and the plastic tip is used for variable inductances.

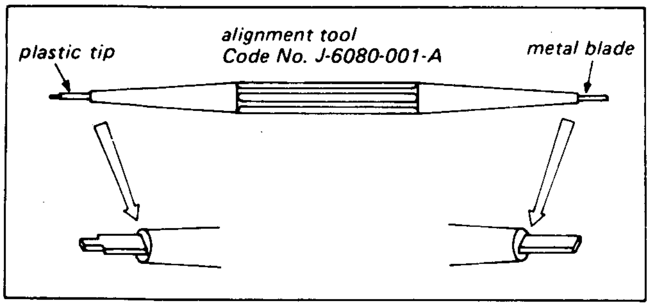

plastic tip
alignment tool
Code No. J-6080-001-A
metal blade

Fig. 5-2. Alignment tool

[Required Levels and Impedances of Input and Output]

Video

Input	VIDEO IN: BNC connector 1.0 V (p-p)$^{+1.0}_{-0.5}$ V (p-p) 75 ohms, unbalanced, sync negative
Output	VIDEO OUT: BNC connector 1.0 V (p-p) ±0.1 V (p-p) 75 ohms, unbalanced, sync negative

Audio

Inputs	AUDIO IN: 2 phono jacks 47 kilohms, –10 dBs (0 dBs = 0.775 V rms) Microphone: –60 dBs, for low-impedance microphone
Outputs	AUDIO OUT: 2 phono jacks Load impedance less than 10 kilohms –10 dBs with 47 kilohms load, unbalanced Headphones: Stereo phone jack –26 dBs, 8 ohms

[Colour-Bar Signal]

The 100% colour-bar signal recorded on the Alignment tape is shown in Fig. 5-3.

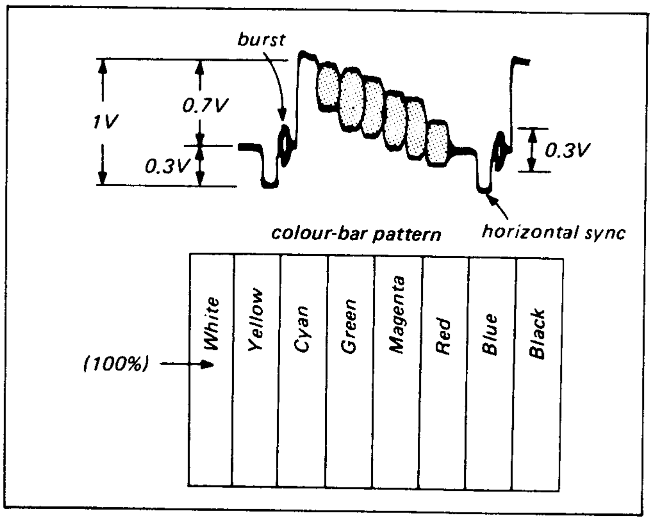
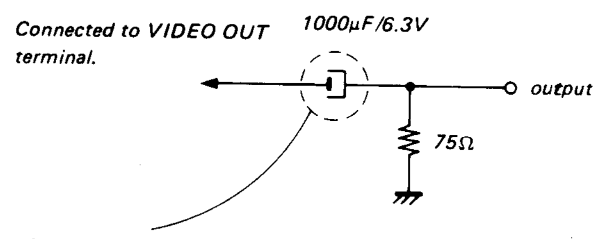

burst
1V
0.7V
0.3V
0.3V
colour-bar pattern
horizontal sync
(100%)
White
Yellow
Cyan
Green
Magenta
Red
Blue
Black

Fig. 5-3. Colour-bar signal recorded on the alignment tape

[75 Ω Terminating Method]

To terminate the video output terminal follow the steps shown in Fig. 5-4.

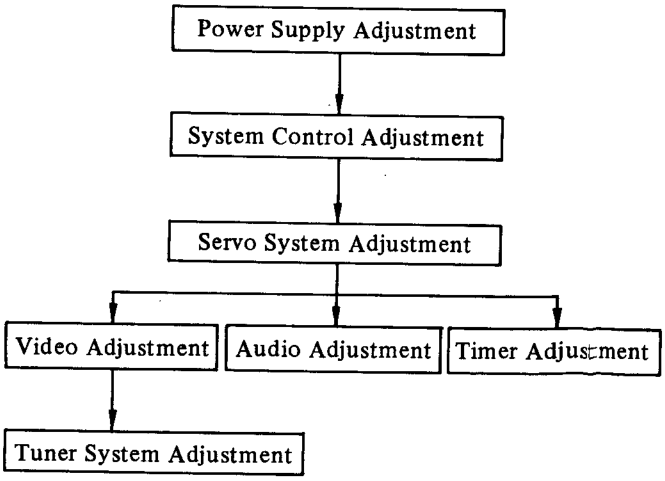

Connected to VIDEO OUT terminal.
1000μF/6.3V
output
75Ω

Note: *The machine may be damaged if it is terminated in 75Ω before cutting the DC component.*

Fig. 5-4. 75Ω terminating circuit

[Adjustment procedure]

Adjust in the order given below.


Power Supply Adjustment
System Control Adjustment
Servo System Adjustment
Video Adjustment
Audio Adjustment
Timer Adjustment
Tuner System Adjustment

5-1. POWER SUPPLY CHECK (CN Board (SR-21))

Measure in E-E mode (power supply switch ON)

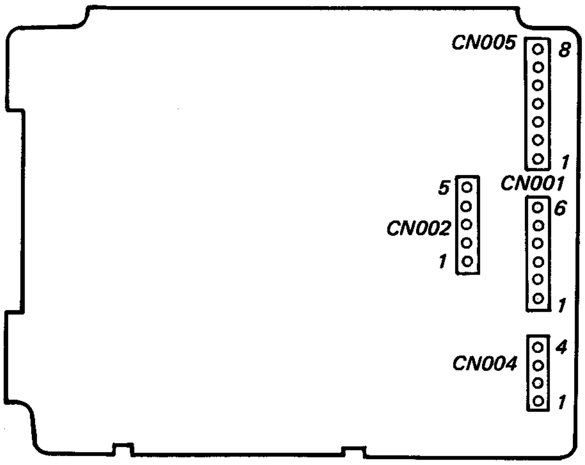

CN005
8
1
5
CN001
6
CN002
1
1
CN004
4
1

Fig. 5-5. Component layout

1. AC 6 V Check
   Pin ① of CN004 shall be 6 ±0.5 V ac
2. Switched 12 V Check
   Pin ① of CN005 shall be 12.2 ±0.2 V dc
3. Switched 12 V (M) Check
   Pin ⑤ of CN005 shall be 12.2 ±0.2 V dc
4. Switched 12 V (C) Check
   Pin ⑦ of CN005 shall be 12.2 ±0.2 V dc
5. Switched 9 V Check
   Pin ③ of CN005 shall be 9.0 ±0.2 V dc
6. Unswitched 42 V Check
   Pin ① of CN001 shall be 42 ±3 V dc
7. Unswitched 12 V Check
   Pin ③ of CN002 shall be 12.2 ±0.5 V dc
8. Unswitched 5.8 V Check
   Pin ① of CN005 shall be 5.8 ±0.3 V dc
9. Unswitched −30 V Check
   Pin ④ of CN004 shall be −30 ±3 V dc

5-2. SYSTEM CONTROL CHECK (SS-50 Board)

5-2-1. Clock Frequency Check

Mode: E-E
Signal: None
Frequency counter: Pin (62) of IC101
Check: f: 4 MHz

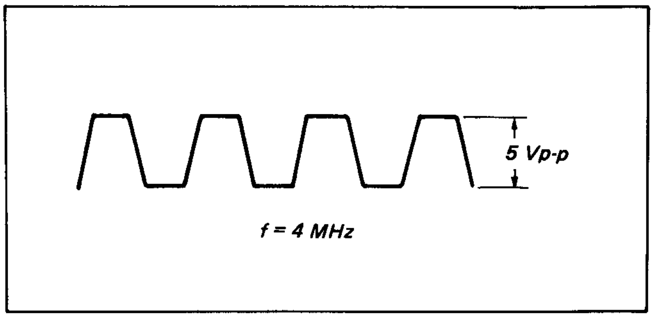


Fig. 5-6. Clock frequency check

5-2-2. Charactor Generator Clock Frequency Check

Mode: E-E
Signal: (1) monoscope, (2) colour-bar

Note: Make this adjustment more than 3 minute after turning on the power switch.

(1) Adjustment Method for Monoscope Pattern

While the counter displays a signal, adjust RV101 so that the right end of the counter display blanking part is aligned with the fifth line from the central vertical line of the monoscope picture. (See Fig. 5-7.)

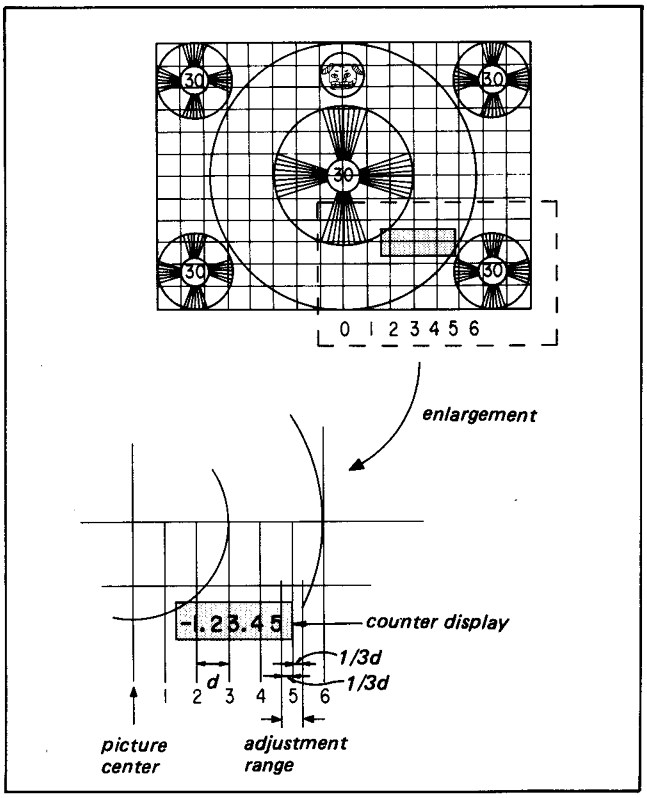

30
30
30
30
30
0 1 2 3 4 5 6
enlargement
-1.23.45
counter display
1/3d
1/3d
d
1 2 3 4 5 6
picture center
adjustment range

Fig. 5-7. Character generated clock frequency

Adjust the right end so that it comes within ±1/3 division from the fifth line.

(2) Adjustment Method for Color-bar Pattern

While the counter displays a signal, adjust RV101 so that the center fo the second digit from the right end of the counter display blanking part aligns with the boundary line between RED and BLUE of the color-bar. (See Fig. 5-8.)

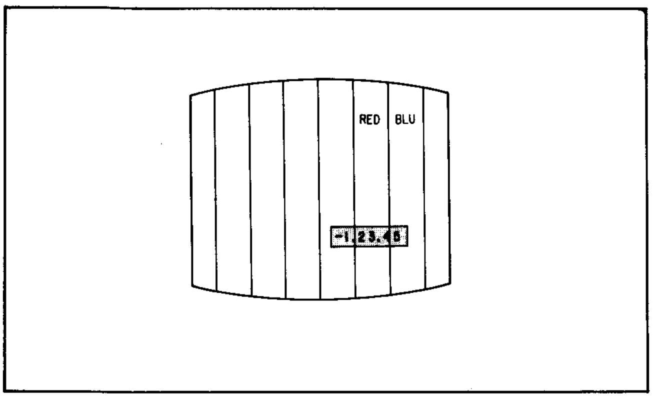


Fig. 5-8. Charactor generator clock frequency check

5-3. SERVO SYSTEM ADJUSTMENT

Adjustment Sequence

1. Drum servo system adjustment
2. Capstan servo system adjustment

5-3-1. Drum Servo System Adjustment

1) Drum Free Speed Adjustment (SS-50 Board)

Mode: Record
Oscilloscope: TP305 (Pin ㊻ of IC301)

[Adjustment method]

Adjust to 1.8 ±0.1 V with RV306. (See Fig. 5-9.)

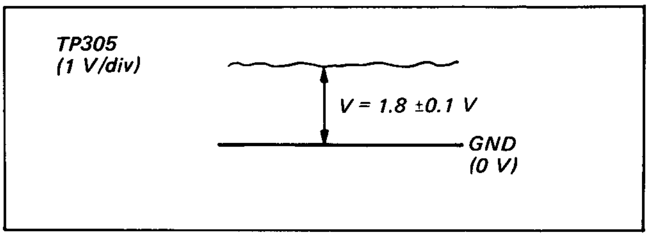


Fig. 5-9. Drum free speed adjustment

2) LOCK Phase Adjustment (SS-50 Board)

Mode: Record
Oscilloscope: CH-1 TP304 (RF SW PULSE)
CH-2 TP307 (COMP SYNC)

[Adjustment method]

Adjust to T=7.0 ±0.5 H (448 ±32 μsec) with RV305. (See Fig. 5-10.)

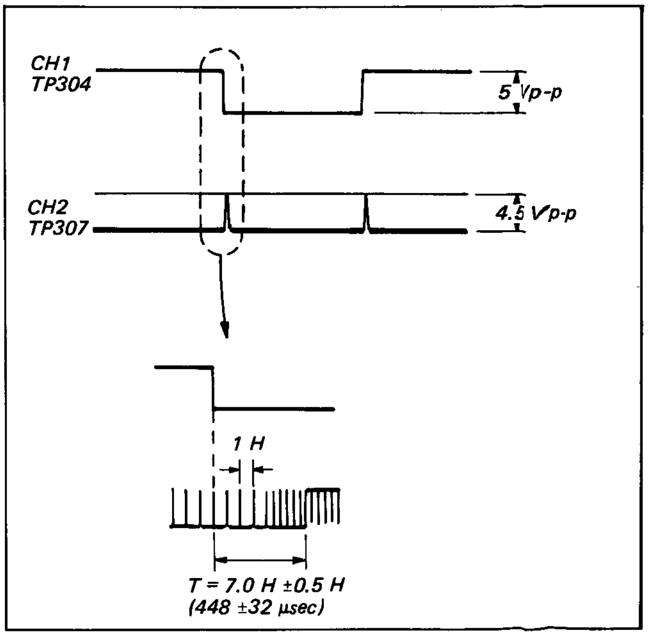


Fig. 5-10. LOCK phase adjustment

3) RF Switching Position Adjustment (SS-50 Board)

Mode: Record
Signal: Alignment tape colour-bar or monoscope
Oscilloscope: CH-1 TP304 (Pin ㉞ of IC301)
(RF SW PULSE)
CH-2 Pin ① of CN309 (DRUM PG)

[Adjustment method]

i) PG (A) Edge
Adjust to 900 ±30 μsec with RV303.
(See Fig. 5-11 (a))

ii) PG (B) Edge
Adjust the duty cycle of RF SW PULSE to 50% ±5 μsec.

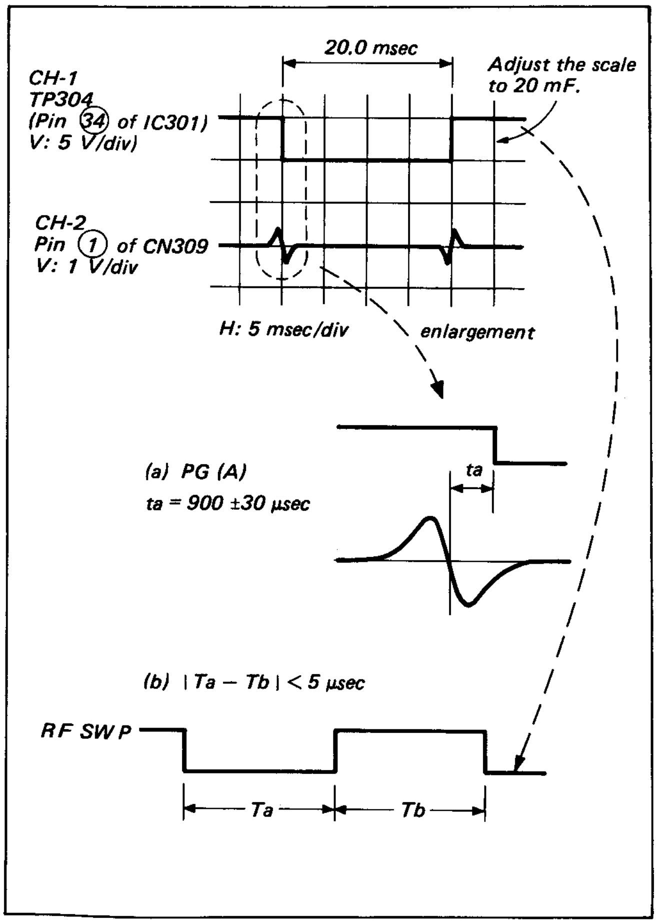

20.0 msec
Adjust the scale to 20 mF.
CH-1
TP304
(Pin ㉞ of IC301)
V: 5 V/div)
CH-2
Pin ① of CN309
V: 1 V/div
H: 5 msec/div
enlargement
(a) PG (A)
ta = 900 ±30 μsec
ta
(b) | Ta − Tb | < 5 μsec
RF SW P
Ta
Tb

Fig. 5-11. RF switching position adjustment

5-3-2. Capstan Servo System Adjustment

1) Capstan Free Speed Adjustment (SS-50 Board)

Mode: Recrod
Oscilloscope: TP302

[Adjustment method]

Adjust to 1.8 ±0.1 V with RV302. (See Fig. 5-12.)

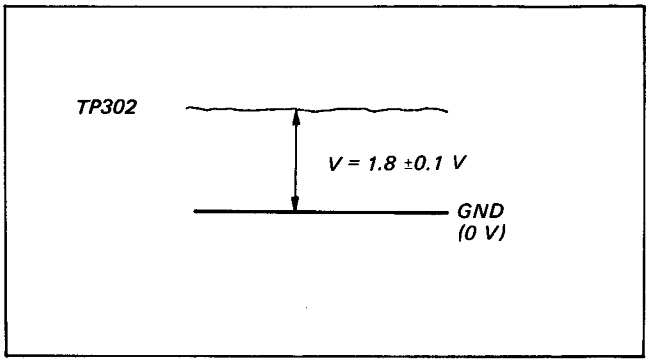

TP302
V = 1.8 ±0.1 V
GND
(0 V)

Fig. 5-12. Capstan free speed adjustment

2) Tracking Center Adjustment (SS-50 Board)

Mode: Record
Signal: Colour-bar
Oscilloscope: CH-1 TP306 (REC CTL)
CH-2 TP301 (TRACON)

[Adjustment method]

i) Set the TRACKING knob to the center click position.

ii) Adjust to 7.2 ±0.05 msec with RV301.
(See Fig. 5-13.)

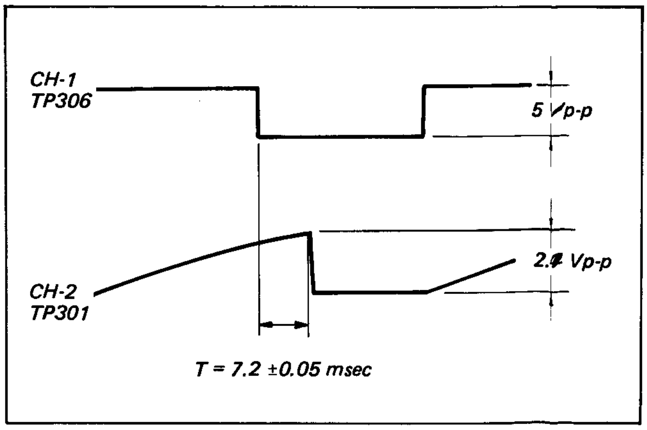

CH-1
TP306
5 Vp-p
CH-2
TP301
2.4 Vp-p
T = 7.2 ±0.05 msec

Fig. 5-13. Tracking center adjustment

3) STILL f_H Correction Adjustment (SS-50 Board)

Mode: Playback – PAUSE
Signal: Alignment tape colour-bar or monoscope
Oscilloscope: TP307 (COMPOSITE SYNC)

[Adjustment method]

Adjust to 63.95 ±0.05 μsec with RV308.
(See Fig. 5-14.)

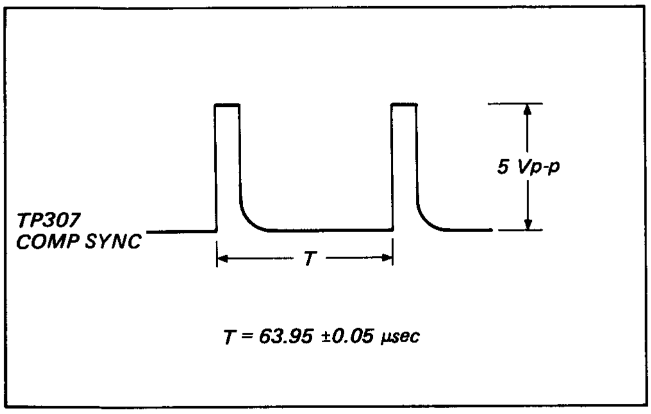

5 Vp-p
TP307
COMP SYNC
T
T = 63.95 ±0.05 μsec

Fig. 5-14. STILL fH correction adjustment

4) CUE f_H Correction Adjustment (SS-50 Board)

Mode: PB x 9 or CUE
Signal: Alignment tape colour-bar or monoscope
Oscilloscope: TP307 (COMPOSITE SYNC)

[Adjustment method]

Adjust to 63.95 ±0.05 μsec with RV307.
(See Fig. 5-15.)

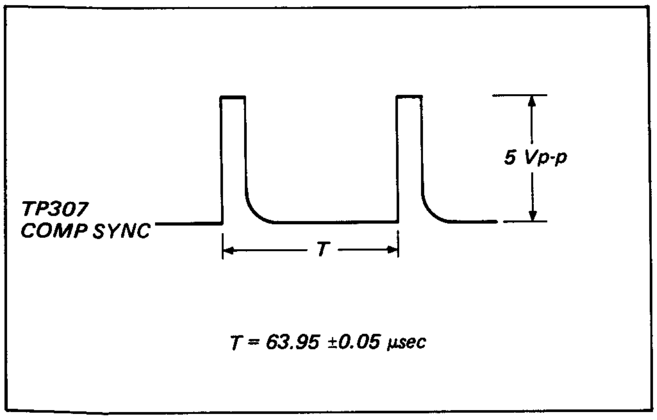

5 Vp-p
TP307
COMP SYNC
T
T = 63.95 ±0.05 μsec

Fig. 5-15. CUE fH correction adjustment

5) Slow f_H Correction Adjustment (SS-50 Board)

Mode: a) 1/5 SLOW (REV)
b) 1/5 SLOW (FWD)
Signal: Alignment tape colour-bar or monoscope
Oscilloscope: TP307 (COMP SYNC)

[Adjustment method]

Adjust the COMP SYNC signal fluctuation width so that it is minimized by alternately operating RV602 and RV604 for a) and RV601 and RV603 for b).
(See Fig. 5-16.)

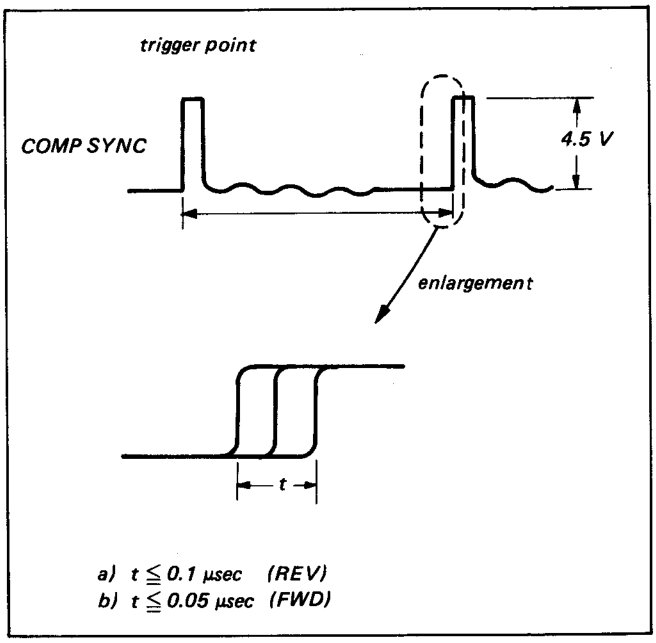

trigger point
COMP SYNC
4.5 V
enlargement
t
a) t ≦ 0.1 μsec (REV)
b) t ≦ 0.05 μsec (FWD)

Fig. 5-16. Slow fH correction adjustment

6) Slow Tracking Control Adjustment (SS-50 Board)

Mode: a) 1/5 Slow Tracking Control (FWD)
b) 1/5 Slow Tracking Control (REV)
Signal: None
Oscilloscope: CH-1 Pin ③ of CN703.
RP-31 BOARD (RF OUT)
CH-2 Pin ② of CN703.
RP-31 BOARD (RF SW PULSE)

[Adjustment method]

i) Set the TRACKING knob to the center click position.
ii) Set up the RECORD mode, then playback the recorded part at 1/5 Slow (FWD) and 1/5 Slow (REV).
iii) Adjust mode a) by RV315 and mode b) by RV316 so that the CH-1 waveform peak comes to the censter of A CH.

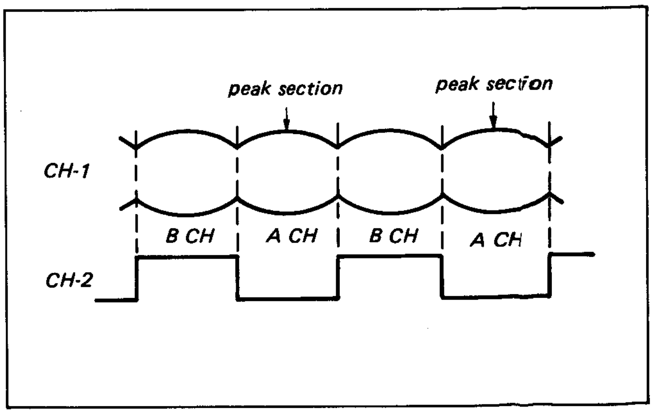

peak section
peak section
CH-1
B CH
A CH
B CH
A CH
CH-2

Fig. 5-17. Slow tracking control adjustment

7) QVD Adjustment (SS-50 Board)

Mode: PB x 1
Signal: Alignment tape colour-bar or monoscope
Oscilloscope: CH-1 Pin ④ of CN114
CH-2 TP304 (RF SW PULSE)

[Adjustment method]

Adjust T_2 by RV103 so that T_2 is equal to T_1. (See Fig. 5-18.)

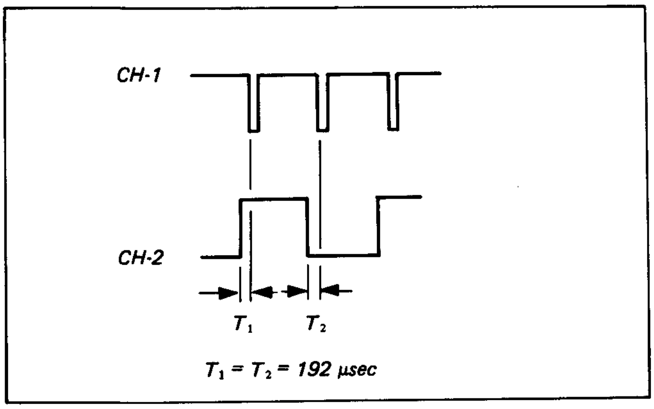


Fig. 5-18. QVD adjustment

5-4. PAL VIDEO SYSTEM ADJUSTMENT

As a rule, first the playback system is adjusted with an alignment tape to check that it operates normally, then the recording system is adjusted.
The adjustment sequence is shown below. The Y signal and chroma signal systems are adjusted for both playback and recording systems.
Colour video signal supplied by the PAL colour-bar generator is used as video input signal for video system adjustment in the record mode. Check that the sync and colour burst signals conform to the specifications designated in "Set-up for Adjustment" in Fig. 5-1.

[Record System Adjustment]

1) AGC adjustment
2) Carrier set adjustment
3) Deviation adjustment
4) Compress adjustment
5) Peak clip adjustment
6) Carrier shift adjustment
7) White clip adjustment
8) Dark clip adjustment
9) Current reducing adjustment
10) Y record current adjustment
11) 4.43 MHz REF adjustment
12) AFC adjustment
13) AFC offset adjustment
14) Pilot burst signal level adjustment
15) Peak Acc adjustment
16) Chroma record current adjustment

[Playback System Adjustment]

1) Playback frequency characteristic adjustment
2) Expand adjustment
3) Playback video level adjustment
4) Y-comb adjustment
5) Dropout compensator adjustment
6) Carrier balance adjustment
7) Chroma comb filter adjustment
8) JOG PLL adjustment
9) JOG exchange chroma level adjustment
10) Shift adjustment

5-4-1. Record System Adjustment

1) AGC Adjustment (YC-40 Board)

Mode: E-E
Oscilloscope: VIDEO OUT
Signal: GRAY SCALE

[Adjustment method]

Adjust to 1 ±0.05 Vp-p with RV021.

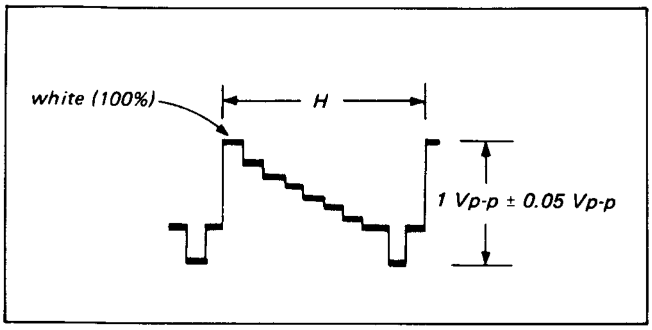


Fig. 5-19. Peak AGC adjustment

2) Carrier Set Adjustment (YC-40 Board)

Mode: E-E
Signal: None
Oscilloscope: Pin ㉕ of IC009

[Adjustment method]

i) Set up the input select to LINE/PCM mode.
ii) Adjust to 3.8 ±0.038 MHz with RV014.

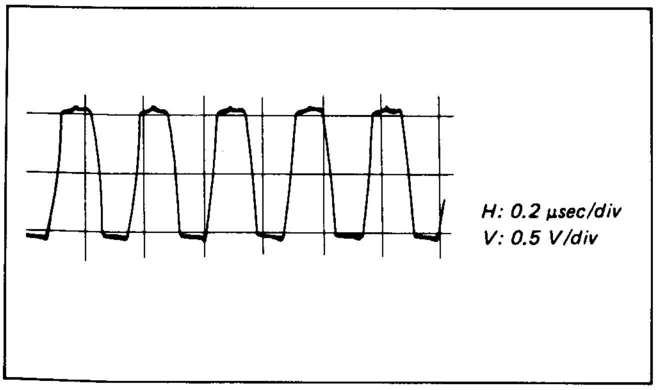


Fig. 5-20. Carrier set adjustment

3) Deviation Adjustment (YC-40 Board)

- The playback system adjustment and the carrier set adjustment in Paragraph 2) above must be completed before making this adjustment.

  Mode: Self-recording and playback
  Signal: Colour-bar
  Oscilloscope: VIDEO OUT

[Adjustment method]

i) Supply the colour-bar signal and set up E-E mode.
ii) Connect the oscilloscope to VIDEO OUT.
iii) Set up RECORD mode.
iv) Playback the recorded section of the tape.
v) Check that the video signal level is 1.0 Vp-p ±0.05 Vp-p, if the level is outside of this range, repeat Steps iii) through iv) above adjusting with RV015 until the standard value is obtained.

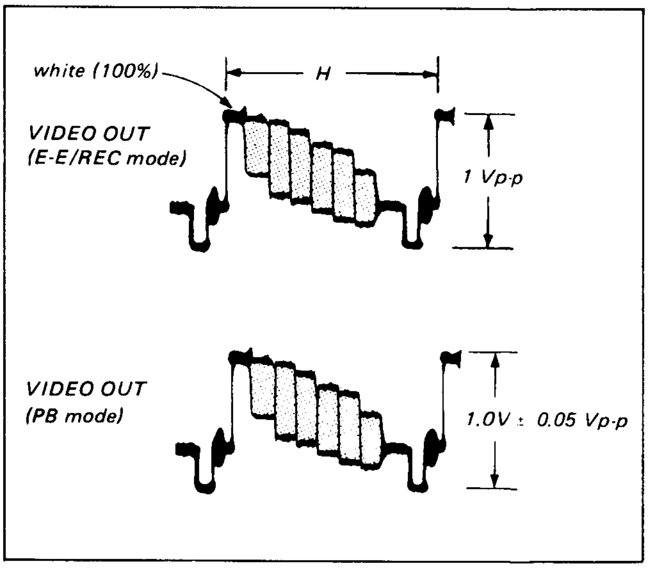


Fig. 5-21. Deviation adjustment

4) Compress Adjustment (YC-40 Board)

Mode: E-E
Signal: None
Digital voltmeter: See Fig. 5-22.

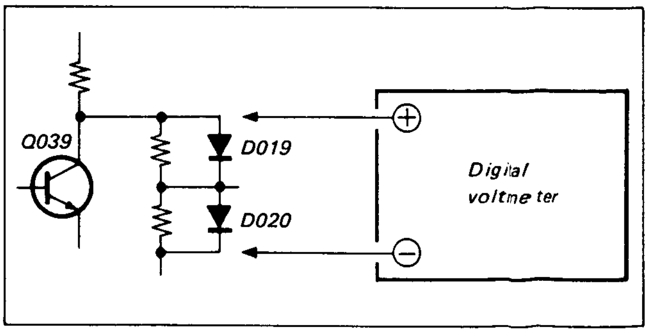


Fig. 5-22.

[Adjustment method]

i) Rotate RV013 counterclockwise full seen from the pattern side.
ii) Adjust to 0.30 ±0.01 V dc using RV016.

Note:

Make this adjustment more than 30 sec after turning on the power switch. Make sure to adjust 7) WHITE CLIP adjustment.

5) Peak Clip Adjustment (YC-40 Board)

Mode: E-E
Signal: White (100%)
Digital voltmeter: Base of Q837

[Adjustment method]

In the Q041 base, the DC level of 100% white is considered as Vp. Adjust the Q837 base DC level by RV022 so that it is equal to Vp + 0.5 ±0.05 V dc. (See Fig. 5-23.)

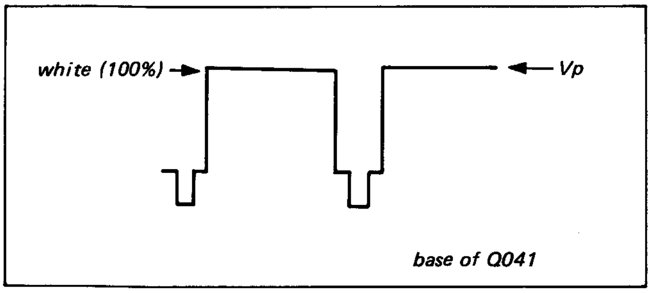


Fig. 5-23. Peak clip adjustment

6) Carrier Shift Adjustment (YC-40 Board)

Mode: E-E
Signal: None
Oscilloscope: Pin ㉕ of IC009

[Adjustment method]

i) Set up the input select to LINE/PCM and Super Beta PRO mode.
ii) Adjust to 4.3 ±0.04 MHz with RV702.

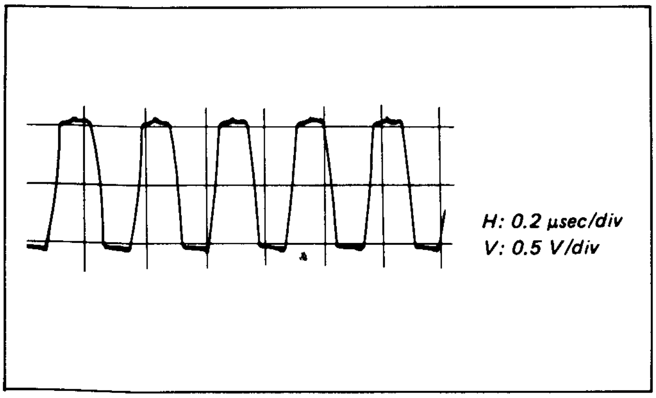


Fig. 5-24. Carrier shift adjustment

7) White Clip Adjustment (YC-40 Board)

Mode: E-E
Signal: Colour-bar
Oscilloscope: Collector of Q038

[Adjustment method]

Set up the PRO mode and adjust to white peak 240 ±10% with RV013. (See Fig. 5-25.)

8) Dark Clip Adjustment (YC-40 Board)

Mode: E-E
Signal: Colour-bar
Oscilloscope: Collector of Q038

[Adjustment method]

Set up the Super Beta PRO mode and adjust to Sync peak 110 ±10% with RV024. (See Fig. 5-25.)

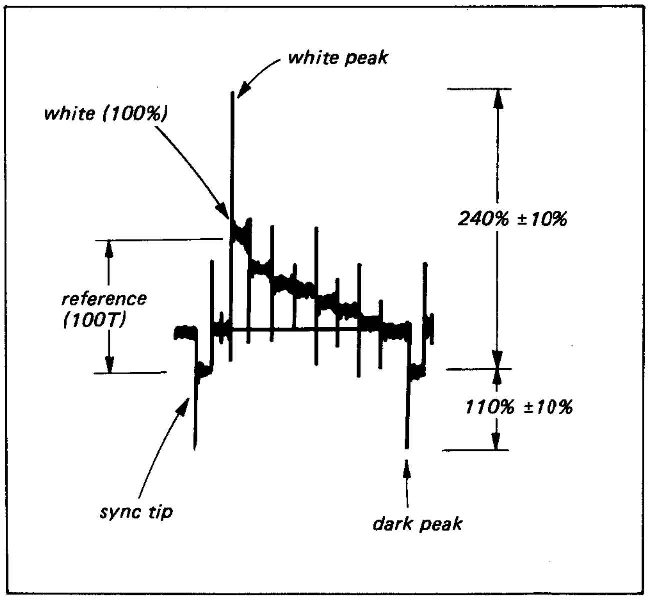


Fig. 5-25. Dark clip and white clip adjustment

9) Current Reducing Adjustment (DH-4 Board)

Mode: Record (PRO mode)
Signal: None
Oscilloscope: TP504

[Adjustment method]

In TP504, adjust the difference in value between E-E mode and RECORD mode by RV501 so that it is equal to 0 ±0.1 Vp-p.

10) Y Record Current Adjustment (DH-4 Board)

Mode: Record
Signal: None
Oscilloscope: TP501 (Pin ② of CN507)

[Adjustment method]

Adjust to 2.05 ±0.1 Vp-p with RV302.
(See Fig. 5-26.)

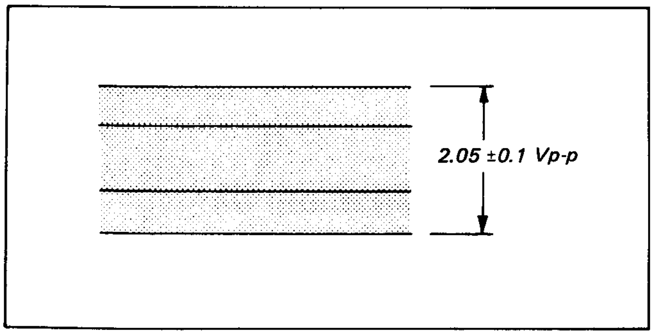


Fig. 5-26. Y record current adjustment

Note:
Repeat items 9) and 10) until each of them complies with its standard.

11) APC Adjustment (YC-40 Board)

Mode: Playback
Signal: Colour-bar
Frequency counter: Pin ⑭ of IC006

[Adjustment method]

Adjust to 4.433619 MHz ±5 Hz with CV001.

12) AFC Adjustment (YC-40 Board)

Mode: E-E
Signal: None
When Pin ③ of CN004 is 5 V, apply 4.5 V dc to Pin ㉖ of IC006.
Frequency counter: Pin ㉑ of IC006

[Adjustment method]

i) Adjust the counter by RV007 to 5.515 MHz ±0.02 MHz.
ii) Confirm item 13).

13) AFC Offset Adjustment (YC-40 Board)

Mode: Record
Signal: Colour-bar
Oscilloscope: Pin ㉖ of IC006

[Adjustment method]

i) Adjust RV006 so that the fluctuation of DC level is minimum. (See Fig. 5-27.)
ii) Confirm item 12).

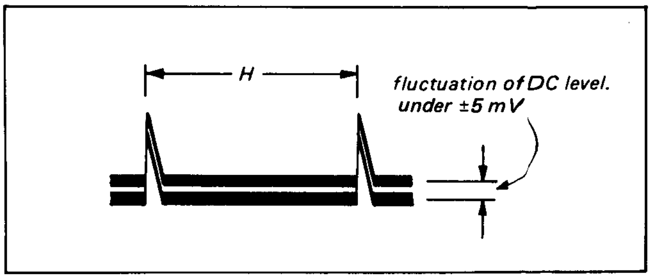


Fig. 5-27. AFC offset adjustment

Note:
Repeat items 12) and 13) until each of them complies with its standard.

14) Pilot Burst Signal Level Adjustment (YC-40 Board)

Mode: E-E
Signal: Colour-bar
Oscilloscope: Pin ① of IC006

[Adjustment method]

Adjust the pilot burst signal with the chroma signal level using RV009.

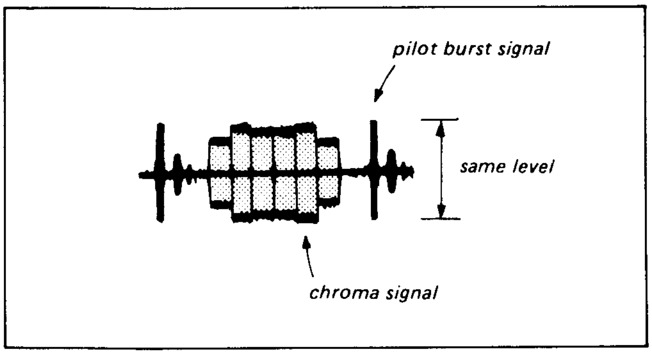

pilot burst signal
same level
chroma signal

Fig. 5-28. Pilot burst signal level adjustment

15) Peak Acc Adjustment (DH-4 Board)

Mode: E-E
Signal: Colour-bar
Oscilloscope: Emitter of Q304

[Adjustment method]

Adjust to 2.0 ±0.1 Vp-p with RV301. (See Fig. 5-29.)

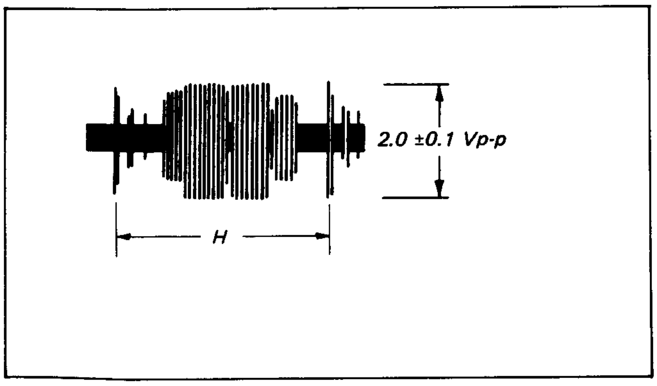


Fig. 5-29. Peak Acc adjustment

16) Chroma Record Current Adjustment (YC-40 Board)

Mode: Record (PRO mode)
Signal: Colour-bar
Oscilloscope: Emitter of Q310 on DH-4 board.

[Adjustment method]

Adjust to 130 ±10 mVp-p with RV008.

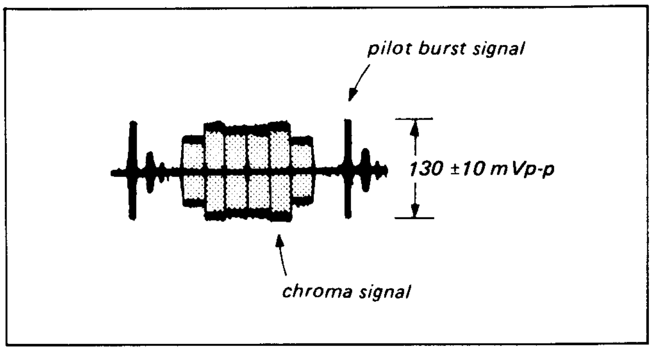

pilot burst signal
130 ±10 m Vp-p
chroma signal

Fig. 5-30. Chroma record current adjustment

Note:
Make sure to adjust 9) Current Reducing Adjustment and 15) Peak Acc Adjustment.

5-4-2. Playback System Adjustment

1) Playback Frequency Characteristic Adjustment (RP-31 Board)

- Adjust both the A and B channels.
  The B channel indicated by ( ).
  Mode: Playback
  Signal: RF sweep
  Oscilloscope: Pin ③ of CN703
  External trigger: Pin ⑤ of CN703

[Adjustment method]

i) Rotate the tracking knob to make 2 MHz to be maximum.

ii) Rotate RV704 to adjust the 2 MHz level of B-ch to be less than ±20 mV to the 2 MHz level of A-ch.

iii) Set the trigger slope to −(+).

iv) Adjust the 5.2 MHz amplitude to 52 – 59% of the 2 MHz amplitude with RV702 (RV701).

- Adjust the A′ channels.
  Mode: Playback
  Signal: RF sweep
  Oscilloscope: Pin ③ of CN703
  External trigger: Pin ⑤ of CN703

Note:

Apply 5 V dc to Pin ① of CN703.
Short between Pin ① and ② of CN307.

[Adjustment method]

i) Rotate the tracking knob to make 2 MHz to be maximum.

ii) Adjust 2 MHz level of A′-ch by RV705 so that it is 75 ±5% of that of A-ch.

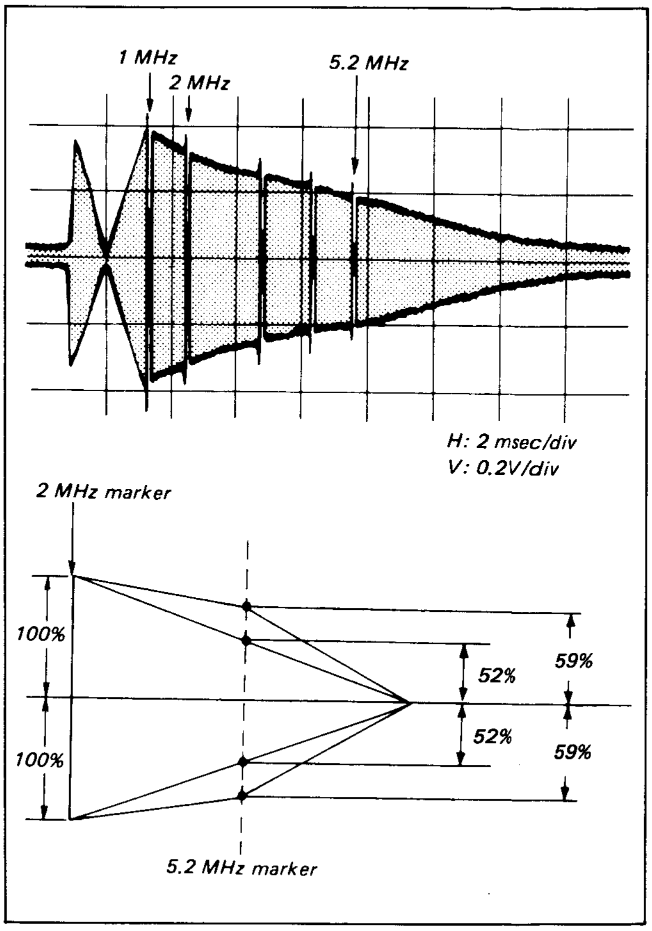


Fig. 5-31. Playback amplifier frequency characteristic adjustment

2) Expand Adjustment (YC-40 Board)

Mode: Playback
Signal: Colour-bar
Digital voltmeter: See Fig. 5-32.

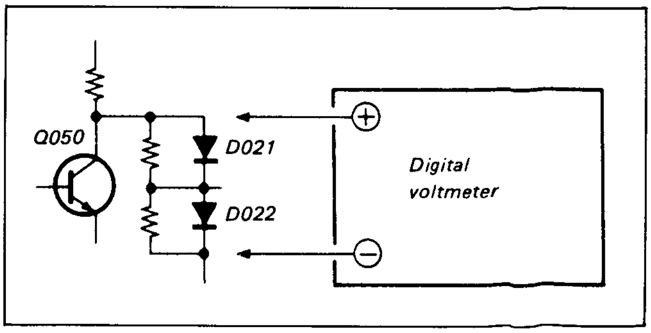


Fig. 5-32.

[Adjustment method]

Adjust to 0.3 ±0.01 V dc using RV020.

Note:

Adjust more than 30 sec after playback.

3) Playback Video Level Adjustment (YC-40 Board)

Mode: Playback
Signal: Colour-bar
Oscilloscope: VIDEO OUT

[Adjustment method]

Adjust to 1.0 V ±0.05 Vp-p with RV019.

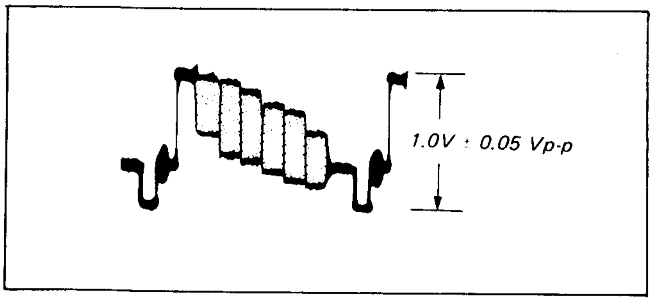


Fig. 5-33. Playback video level adjustment

4) Y-Comb Adjustment (YC-40 Board)

Mode: Playback
Signal: Colour-bar
Oscilloscope: Pin ⑧ of IC401

[Adjustment method]

Rotate RV401 to adjust so that the limiter works vertically symmetrically. (See Fig. 5-34.)

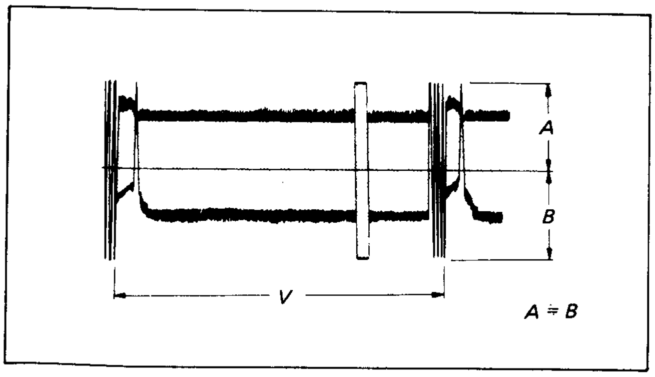


Fig. 5-34. Y-comb adjustment

5) Dropout Compensator Threshold Adjustment (YC-40 Board)

Mode: Playback
Signal: Colour-bar
Digital voltmeter: Pin ㉖ of IC009

[Adjustment method]

Adjust to 0.26 ±0.02 V dc with RV010.

6) Carrier Balance Adjustment (YC-40 Board)

Mode: Playback
Signal: Colour-bar
Adjust while observing the monitor TV screen.

[Adjustment method]

Minimize beats with RV005.

7) Chroma Comb Filter Adjustment (YC-40 Board)

Mode: Playback
Signal: Colour-bar
Adjust while observing the monitor TV screen.

[Adjustment method]

Minimize beats with RV501 and LV501.

8) JOG PLL Adjustment (YC-40 Board)

Mode: E-E
Signal: Colour-bar
Oscilloscope: Pin ⑩ of IC003

[Adjustment method]

Adjust to 20 ±1 μsec with RV003.
(See Fig. 5-35.)

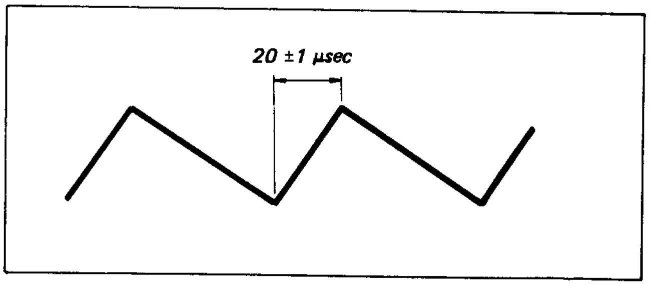


Fig. 5-35. JOG PLL adjustment

9) JOG Exchange Chroma Level Adjustment (YC-40 Board)

Mode: Playback – PAUSE (STILL)
Signal: Colour-bar
Osciiloscope: Pin ⑧ of IC003

[Adjustment method]

Adjust RV002 so that the fluctuation of level is minimum. (See Fig. 5-36.)

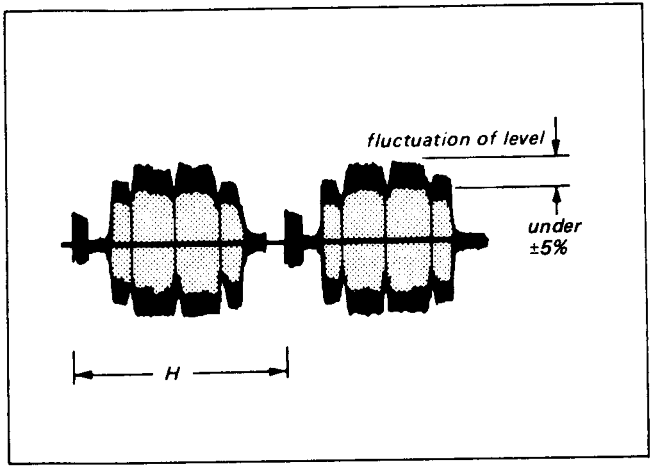

fluctuation of level
under ±5%
H

Fig. 5-36. JOG EXCH. C. level adjustment

10) Shift Adjustment (YC-40 Board)

Mode: Playback – PAUSE (STILL)
Signal: Alignment tape colour-bar
Oscilloscope: Pin ㉓ and ㉔ of IC003

[Adjustment method]

Adjust to the signal level (per 1H) with RV004.

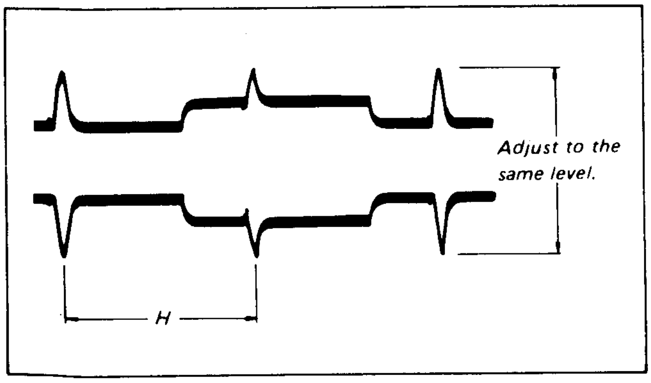

Adjust to the same level.
H

Fig. 5-37. Shift adjustment

5-5. SECAM VIDEO SYSTEM ADJUSTMENT (ES MODEL)

- Make this adjustment after adjusting the PAL video system.
- For this adjustment, use the equipment listed below in conjunction with an alignment tape and SECAM colour-bar signals.

[Equipment Required]

(1) SECAM Colour Monitor TV
(2) Oscilloscope, Dual-trace, Bandwidth . . . more than 10 MHz with delay mode
(3) SECAM Colour-Bar Generator
(4) Alignment Tape, Type: KR5-1J, Code No. 8-969-996-03

[Setup for Adjustment]

In this adjustment, video signals obtained from the pattern generator will be used as adjustment signals. Therefore, the video output signals should be within the specifications. Verify video signals by connecting an oscilloscope to VIDEO OUT connector (75 Ω terminated). Check that the video signals are flat when the amplitude of the horizontal sync signal is about 0.3 Vp-p, the amplitude of the video portion is about 0.7 Vp-p, and the amplitude of the burst signal is about 0.3 Vp-p.
The video signal (colour-bar signal) used in this adjustment is shown in Fig. 5-38.

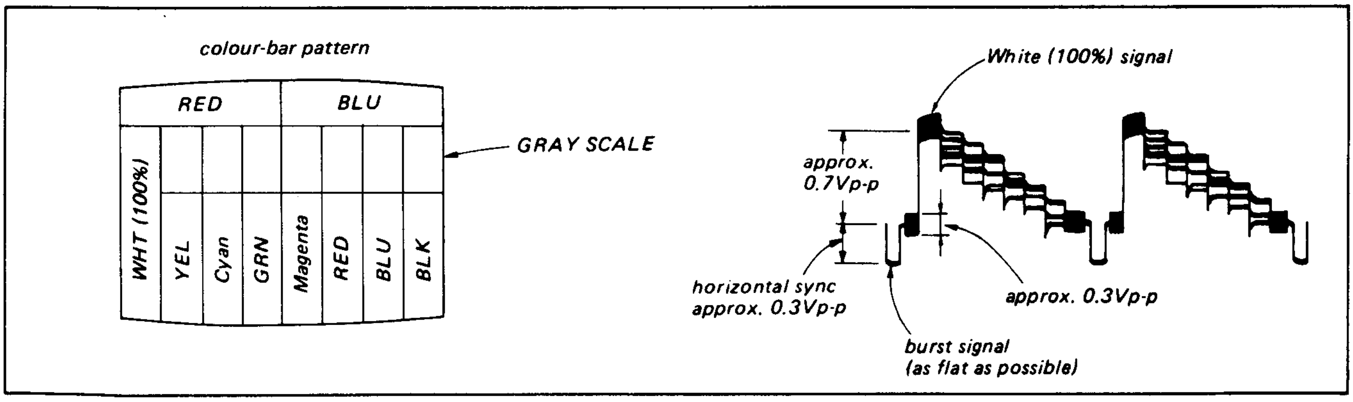

colour-bar pattern
RED
BLU
GRAY SCALE
WHT (100%)
YEL
Cyan
GRN
Magenta
RED
BLU
BLK
White (100%) signal
approx. 0.7Vp-p
horizontal sync approx. 0.3Vp-p
approx. 0.3Vp-p
burst signal (as flat as possible)

Fig. 5-38. SECAM video (colour-bar) signal

[Alignment Tape]
KR5-1J

	Video signal	Audio signal	Playing time	Use for
1.	Colour-bars	3 kHz – 5 dB	5 min	General performance, tape speed checks, switching position adjustment.
2.	Monoscope	333 Hz – 25 dB	5 min	Video head dihedral, audio level adjustment.
3.	RF sweep	5 kHz – 25 dB	5 min	Video, audio frequency characteristics, audio azimuth adjustment. marker: 1, 2, 3.58, 4.5, 5.2 MHz
4.	Tracking 1 MHz (CH-B) *1 (Channel B is inserted in every 3 frames.)	1 kHz – 5 dB *2 (Signal is dropped out in the positions where channel B is inserted.)	5 min	Tracking, Audio height adjustments CTL Position check. (Check if *1 and *2 are the same position.)

[Colour-Bar Signal]

The 100% colour-bar signal recorded on the Alignment tape is shown in Fig. 5-39.

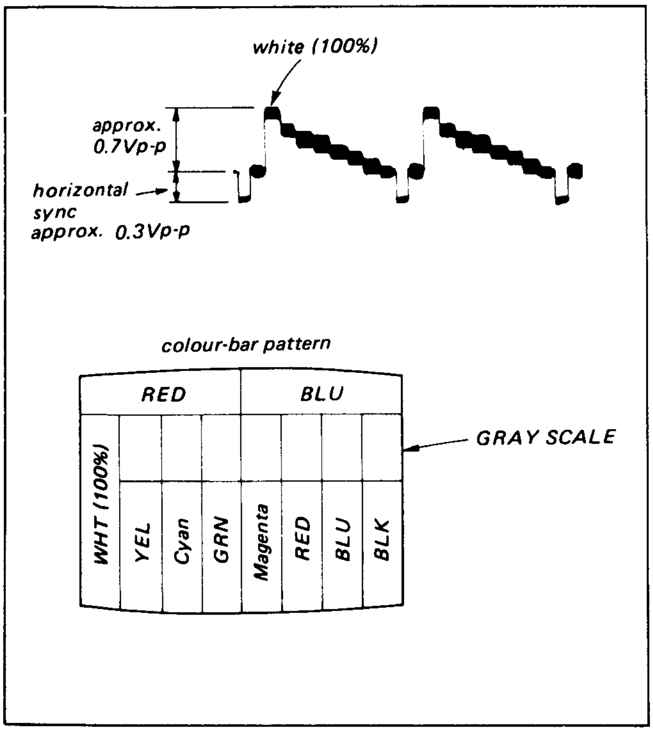

white (100%)
approx. 0.7Vp-p
horizontal sync approx. 0.3Vp-p
colour-bar pattern
RED
BLU
GRAY SCALE
WHT (100%)
YEL
Cyan
GRN
Magenta
RED
BLU
BLK

Fig. 5-39. Colour-bar signal recorded on the alignment tape

1) Bell Filter Adjustment (YC-40 Board)

Mode: E-E
Signal: SECAM colour-bar
Oscilloscope: Pin ⑦ of IC005

[Adjustment method]

Adjust LV003 until the waveform is flat.
(See Fig. 5-40.)

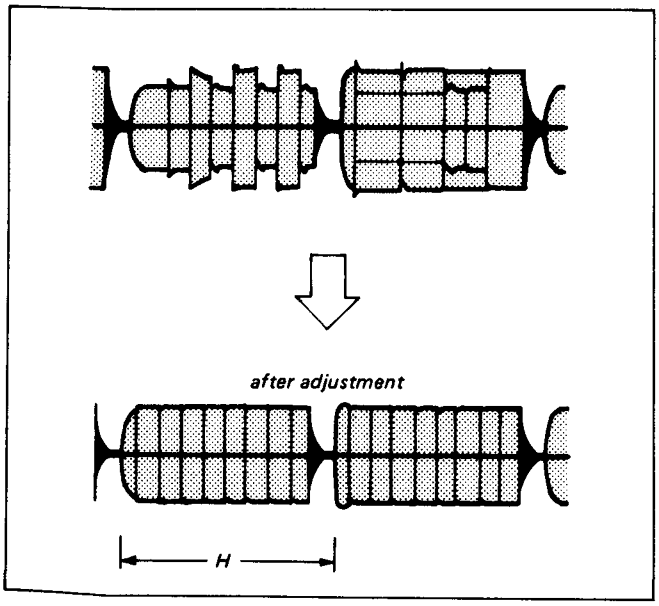


Fig. 5-40. Bell filter adjustment

2) SECAM ACK Adjustment (YC-40 Board)

Mode: E-E
Signal: SECAM colour-bar
Oscilloscope: Pin ⑨ of IC002

[Adjustment method]

i) Rotate LV001 to make the waveform amplitude to be maximum.
ii) Adjust RV001 to 5.8 ±0.2 Vp-p.

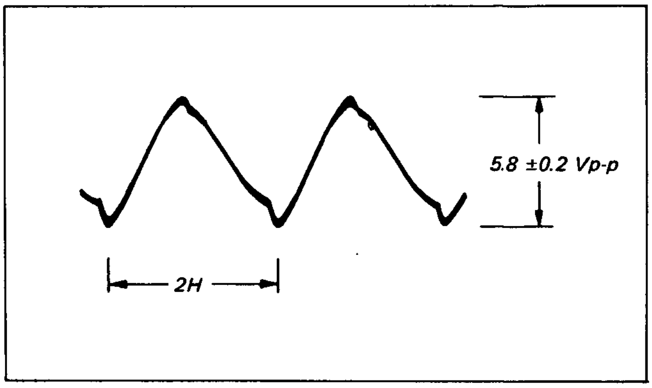


Fig. 5-41. SECAM ACK adjustment

3) Counter Bell Filter Adjustment (YC-40 Board)

Mode: Self-recording and playback
Signal: SECAM colour-bar
Adjust while observing the monitor TV screen.

[Adjustment method]

i) Record SECAM colour-bar signals.
ii) Playback the recorded signals.
iii) While observing the monitor TV screen, adjust LV002 until the border between the red and blue areas is at its cleanest (minimum beats).

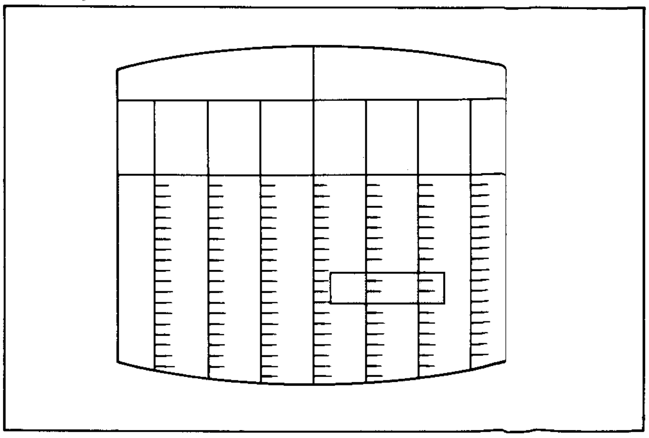


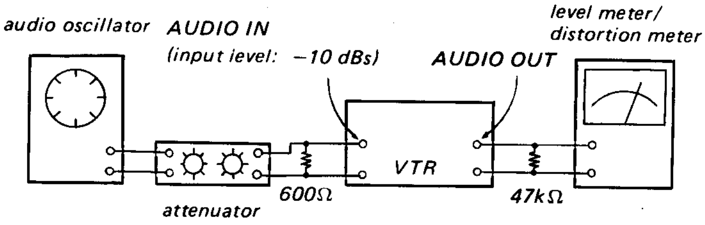
Fig. 5-42. Counter bell filter adjustment

5-6. AUDIO SYSTEM ADJUSTMENT

Use a Dynamicron tape for adjustments.

[Connection of Related Equipment]

Note:
Set the INPUT SELECT switch to LINE/PCM.



5-6-1. Normal Audio System Adjustment (TA-36/37 Board)

Note:
Set the BETA Hi-Fi switch to NORM.

[Adjustment method]

1. ACE head adjustment . . . . See "Mechanical Adjustment"
2. Playback frequency characteristic check
3. Playback output level adjustment
4. Bias oscillator check
5. Record bias adjustment
6. Overall S/N check
7. Overall distortion check
8. Audio insert adjustment

1. ACE Head Adjustment

Refer to "Mechanical Adjustment"

2. Playback Frequency Characteristic Check

Playback 333 Hz and 7 kHz from the alignment tape and check so that the level difference between 333 Hz and 7 kHz is within −4 ±5 dB.

3. Playback Output Level Adjustment

Playback 333 Hz from the alignment tape and adjust so that the output level is −10 dBs ±0.5 dB with RV901.

4. Bias Oscillator Check

(1) Set the input signal level to zero and set up the RECORD mode.
(2) Connect a frequency counter to Pin ① of CN902. The reading should be 65 kHz ±6.5 kHz. (See Fig. 5-43.)

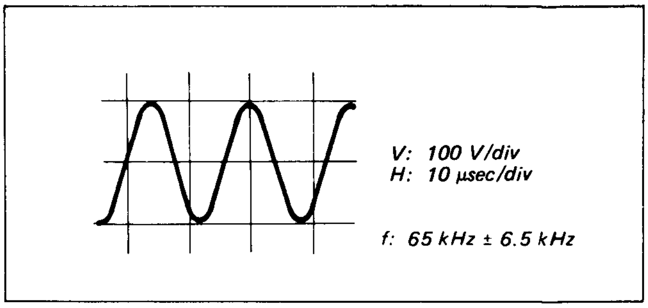


Fig. 5-43. Bias oscillator check

5. Record Bias Adjustment

Check that "Playback frequency characteristic adjustment" has been made.

(1) Connect TP903 and GND with a jumper wire so as to turn off the AGC operation.
Connect Pin ⑤ of CN901 and GND with a jumper wire so as to turn off the HI CUT operation.
(2) Supply a 333 Hz signal.
(3) Set up the E-E mode and adjust the oscillator output level so that the level meter reading is −30 dBs.
(4) Record signals.
(5) Supply a frequency of 7 kHz and perform Steps (3) and (4) above.
(6) Play back the recorded section of the tape and check that the output level at 7 kHz is −4 ±5 dB relative to the output level at 333 Hz. If the level is outside this range, repeat Steps (2) through (5) adjusting with RV902 until the standard is met.
(7) Remove the jumper wire after making the adjustment.

6. Overall S/N Check

(1) Supply a 333 Hz signal at −10 dBs.
(2) Record signals.
(3) Set the input signal level to zero and record signals.
(4) Play back the recorded section of the tape and check that the output level difference is greater than 38 dB.

7. Overall Distortion Check

(1) Supply a 333 Hz signal at −10 dBs.
(2) Record signals.
(3) Play back the recorded section of the tape and verify that the distortion is below 4%.

8. Audio Insert Adjustment

(1) Set the input signal level to zero and set up the RECORD mode.
(2) Read TP904 value (F Hz) at the frequency counter.
(3) Adjust TP904 value by LV901 so that it is F ±0.6 kHz at audio insert mode.

5-6-2. BETA Hi-Fi Audio System Adjustment (FL-8, AF-14 Boards)

Note:
Set the RECORD switch to VIDEO.
Set the MPX FILTER switch to OFF.
Set the BETA Hi-Fi switch to AUTO.
( ) is R-CH.

[Adjustment method]

1. REC VR adjustment
2. E-E input level check
3. Dynamic emphasis adjustment
4. AFM carrier frequency adjustment
5. AFM deviation adjustment
6. AFM record current adjustment
7. Level meter adjustment
8. RF input level adjustment
9. Tracking meter adjustment
10. Demodulator f_0 adjustment
11. Demodulator DC offset preset adjustment
12. Level and level balance adjustment
13. Overall frequency characteristic check
14. Overall distortion check
15. Overall S/N check

1. REC VR Adjustment (FL-8 Board)

(1) Input at 400 Hz and −10 dB signal to the audio line input to set up a RECORD state. [Adjust the REC level volume control to the center click.]

(2) Adjust the level of Pin ⑤ (Pin ②) of CN1 to be −22 ±0.5 dBs with RV2 (RV3) on FL-8 board.

2. E-E Input Level Check

(1) Input at 400 Hz and −10 dB signal to the audio line input to set up a RECORD state. [Adjust the REC level volume control to the center click.]

(2) Check the level of TP008 (TP010) to be −26.5 ±0.5 dB.

3. Dynamic Emphasis Adjustment

(1) Input a 400 Hz and −10 dB signal to the audio line input to set up a RECORD state. [Adjust the REC level volume control to the center click.]

(2) Connect TP009 and 011 to the VTVM puls side. Adjust RV005 so that $\frac{A+B}{2} = -20.0 \pm 0.1$ dBs, A = −20.0 ±0.3 dBs and B = −20.0 ±0.3 dBs where TP009 level is A dBs and TP011 level is B dBs.

4. AFM Carrier Frequency Adjustment

(1) Connect a frequency counter to TP001 [Emitter of Q016] (TP002 [Emitter of Q017]) in a no-signal state (shorted between the audio line input and GND) to set up a RECORD state.

(2) Adjust to 1.44 ±1 kHz (2.1 ±1 kHz) using RV001 (RV011).

(3) Restore the shorting between the line input and GND after completing the adjustment.

5. AFM Deviation Adjustment

(1) Input and record a 400 Hz and −10 dB signal to the audio line input and play back the recorded part. (Adjust the REC level volume control to the center click.)

(2) Playback BETA Hi-Fi alignment tape (KR5-10C), and measure the line-out level.

(3) Adjust RV002 (RV010) so that the value of (1) and (2) becomes same.

6. AFM Record Current Adjustment

(1) Short between the audio line input and GND to set up a no-signal state.

(2) Connect an oscilloscope to Pin ⑤ of CN002.

(3) Adjust f_2 to 160 ±5 mVp-p using RV003 and check that f_1 is inside 45 ±5 mVp-p.

(4) Restore the shorting between the line input and GND after completing the adjustment.

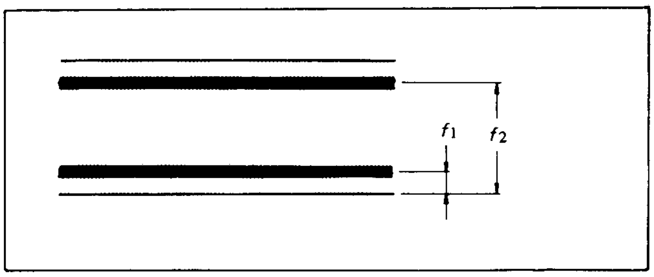


Fig. 5-44. AFM record current

7. Level Meter Adjustment

(1) Input a 400 Hz and −10 dB signal to the audio line input. [Adjust the REC level volume control to the center click.] [Level meter sw to ON.]

(2) Adjust the level meter by RV602 (RV603) so that lamps up to the seventh one come on.

(3) Operate the REC level volume control and check that the level meter lamps come on in conjunction with operation of the control.

(4) Check that the lamps go off when turning off the level meter switch.

8. RF Input Level Adjustment

Note:

Make this adjustment after checking that the AFM record current has been adjusted. Rotate and adjust the tracking control knob so that the Pin ① of CN015 output waveform becomes maximum.

(1) Connect the 1500 Ω resistor between Pin ① and ② of CN015.

(2) Record a picture by placing the RECORD mode switch in the VIDEO position, then playback the picture.

(3) Connect an oscilloscope to Pin ① of CN015 and adjust to 1.9 Vp-p $^{+0.2}_{-0.5}$ Vp-p with RV009.

(4) After the adjustment, disconnect the 1500 Ω resistor between Pin ① and ② of CN015.

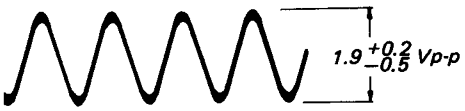


Fig. 5-45. RF input level adjustment

9. Tracking Meter Adjustment

(1) Record a picture by placing the RECORD mode switch in the SOUND position, then playback the picture (placing the level meter switch in the TRACKING position).

(2) While placing the tracking VR in the center click position, adjust RV601 so that level meter lamps up to the seventh one come on (only L-CH lamps must come on).

(3) Record colour-bar, monoscope and other pictures by placing the RECORD mode switch in the VIDEO position, then playback them and check that level meter lamps do not come on.

10. Demodulator fo Adjustment

- L-CH
  (1) Input a 1.34 MHz 300 mVp-p signal into TP005 and 006, then record a picture.
  (2) Playback the picture. Connect a digital voltmeter to TP007 and adjust it by RV012 to 2.0 ±0.1 V dc.
- R-CH
  (1) Short between the audio line input and GND, and record.
  (2) Playback the recorded part.
  Connect an digital voltmeter to TP016 and adjust to 2.0 ±0.1 V dc with RV008.

11. Demodulator DC Offset Preset Adjustment

(1) Input a 10 kHz and −10 dB signal to the audio line input.

(2) Record the signal and play back the recorded part. Check the waveform from the audio line output, and adjust to make the DC difference in grade minimum with RV604 (L-CH) and RV605 (R-CH).

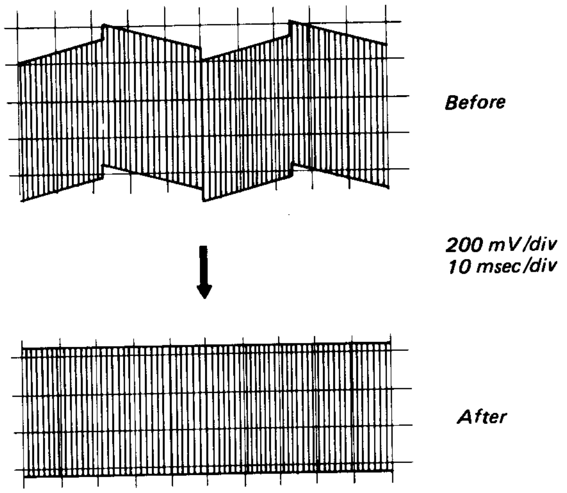


Fig. 5-46. Demodulator DC offset adjustment

(3) Carry out the level and level balance adjustment of item 12).

(4) Repeat (1) and (2) above.

12. Level and Level Balance Adjustment

(1) Play back the BETA Hi-Fi alignment tape (KR5-10C).

(2) Connect an oscilloscope to TP008 (TP010) and adjust to −20 ±0.1 dB with RV014 and RV013 (RV006 and RV007), and to eliminate the level difference. (See Fig. 5-47.)

(3) Restore the shorting between the aduio line input and GND.

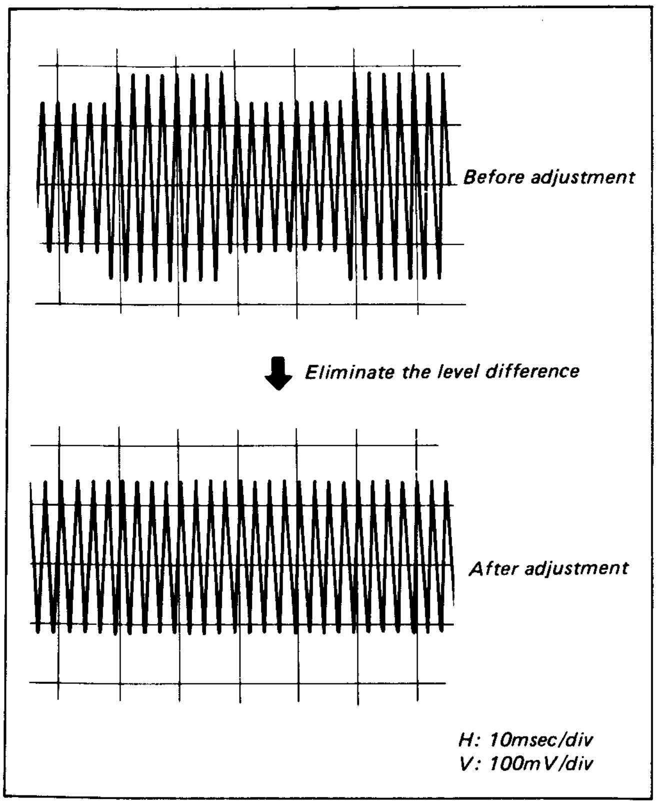


Fig. 5-47. Playback level balance adjustment

13. Overall Frequency Characteristic Check

(1) Feed a 400 Hz signal to the audio line input. Set up the E-E mode and adjust the attenuator so that the audio line output level becomes −10 dB.

(2) Record the signal.

(3) Change the ferequency to 20, 100, and 400 Hz, as well as to 10 kHz and 20 kHz, then repeat Steps (1) and (2).

(4) Play back the recorded part and check that the output levels are inside the standard.
(See Fig. 5-48.)

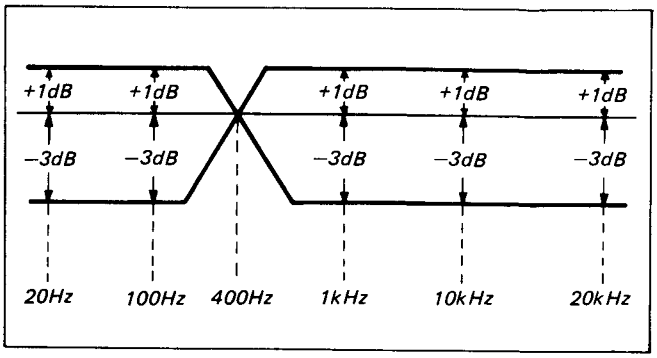


Fig. 5-48. Overall frequency characteristic check

14. Overall Distortion Check

(1) Supply a 400 Hz signal at 6.5 dB.

(2) Record the signal.

(3) Play back the recorded part of the tape and verify that the distortion is below 0.5%.

15. Overall S/N Check

(1) Supply a 400 Hz signal at −10 dBs.

(2) Record signals.

(3) Set the input signal level to zero and record signals.

(4) Playback the recorded section of the tape and check that the output level difference is greater than 65 dB. (Measure at IHF-A wating curve.)

5-7. TUNER SYSTEM ADJUSTMENT (TA-36/37 Board)

1. Tuner AGC Adjustment

(1) Receive broadcast TV signals in the highest contrast.

(2) Turn RV001 until snow (intensity-modulated display) noise appears on the TV screen.

(3) Turn RV001 backward until the snow (intensity-modulated display) noise disappears.

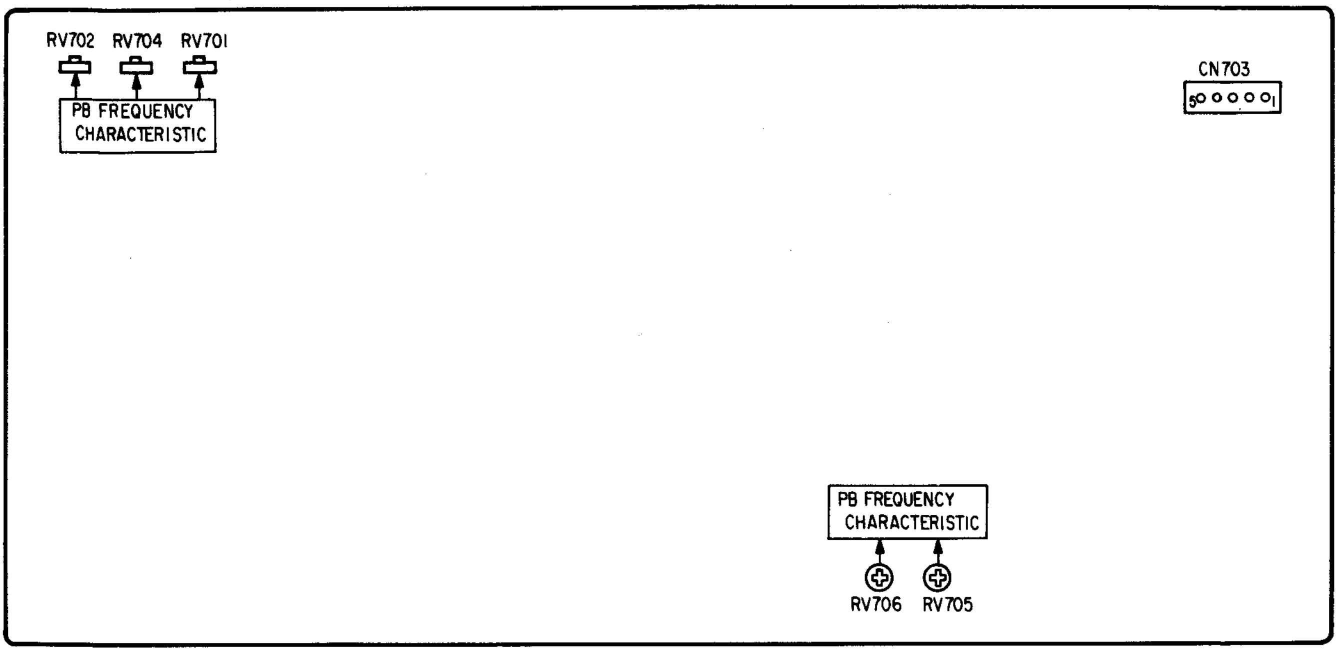
(4) Receive signals of all channels in turn, and ensure that there is no cross modulation beat, image deformation nor snow noise effect.

2. Stereo Separation Adjustment (TA-36 Board Only)

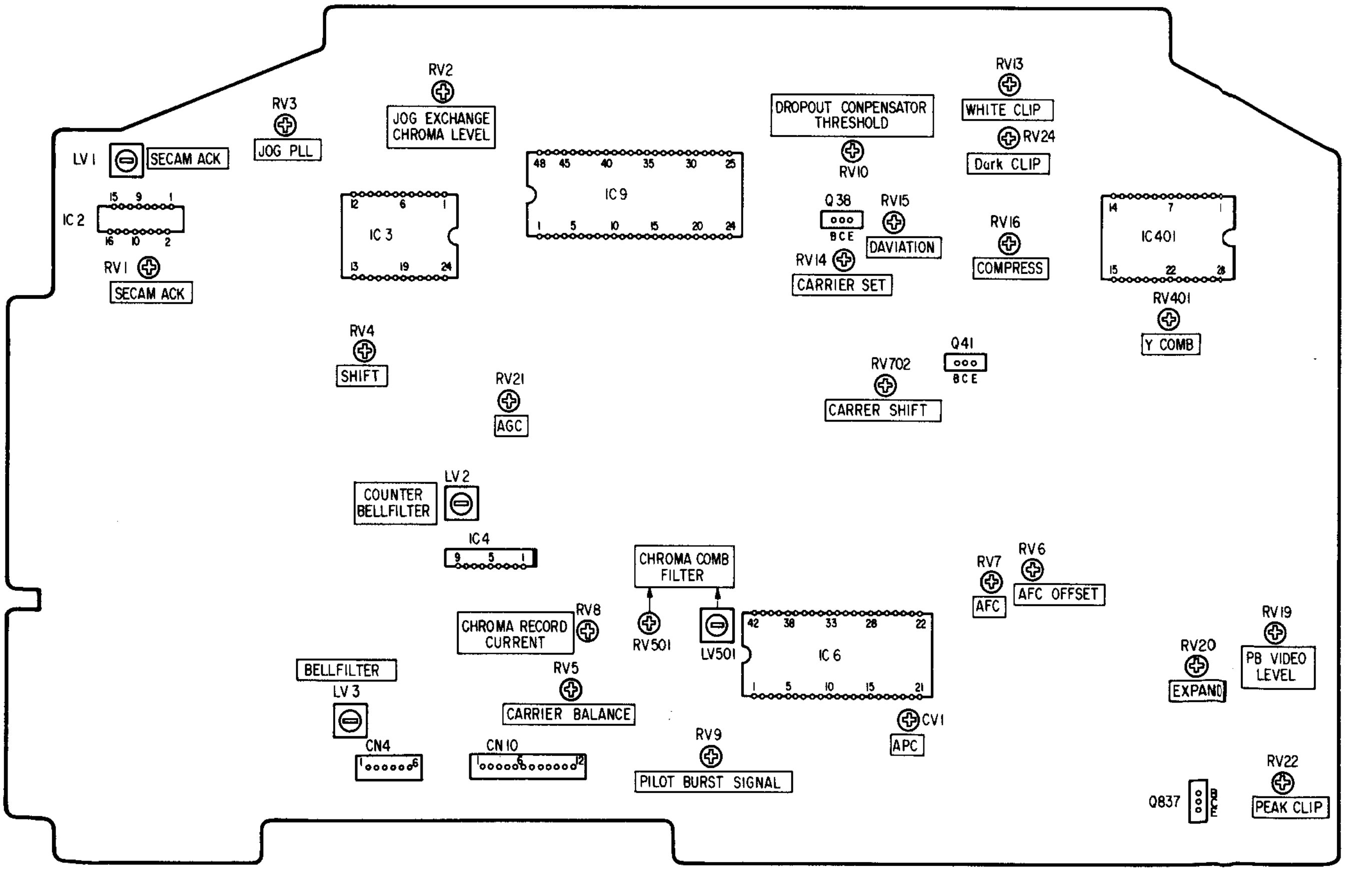
(1) L-CH and R-CH receive 400 Hz and 1 kHz stereo signals respectively from the signal generator.

(2) Connect an oscilloscope to Pin ① of CN002 and adjust RV002 so that the shaking by 1 kHz of the 400 Hz waveform becomes smallest.

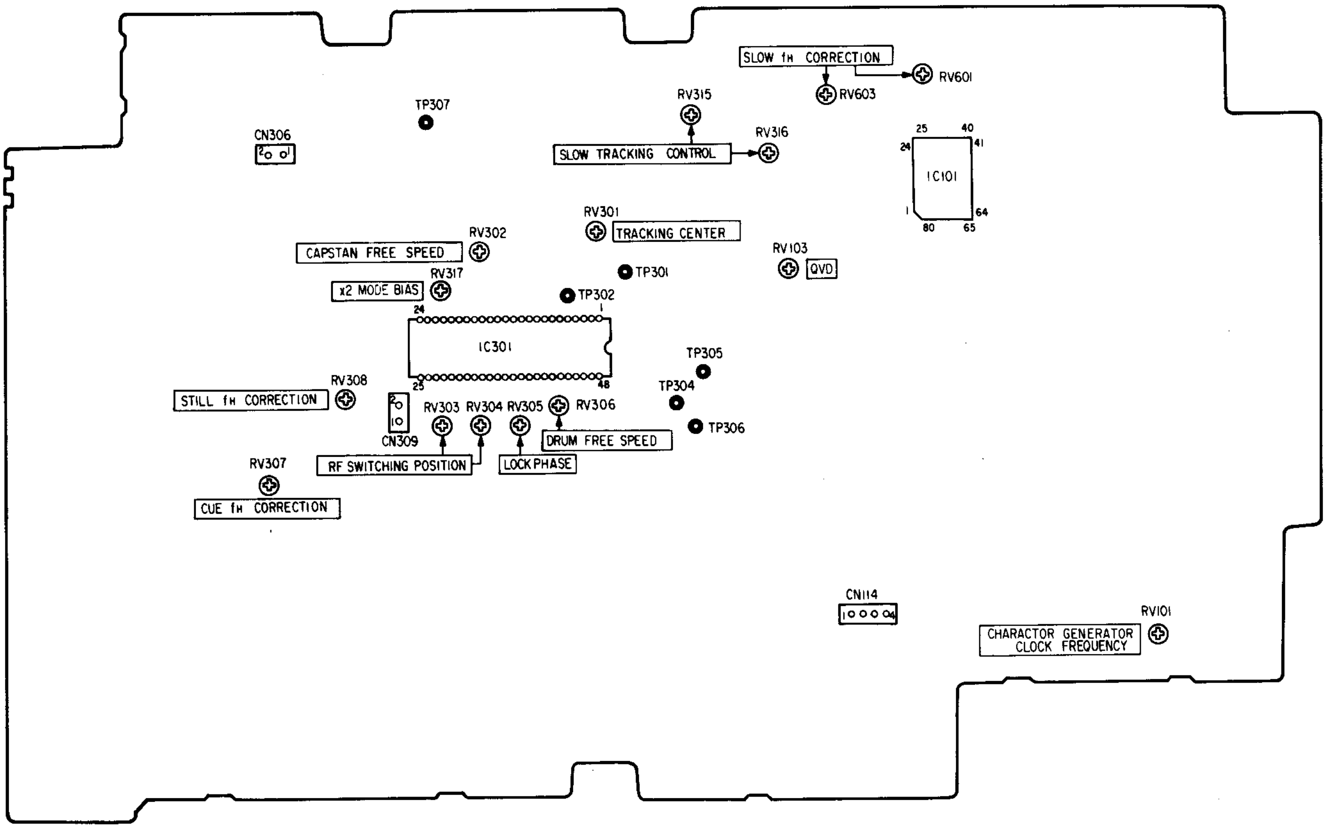
RP-31 board
(Component side)


RV702
RV704
RV701
PB FREQUENCY CHARACTERISTIC
CN703
5
1
PB FREQUENCY CHARACTERISTIC
RV706
RV705

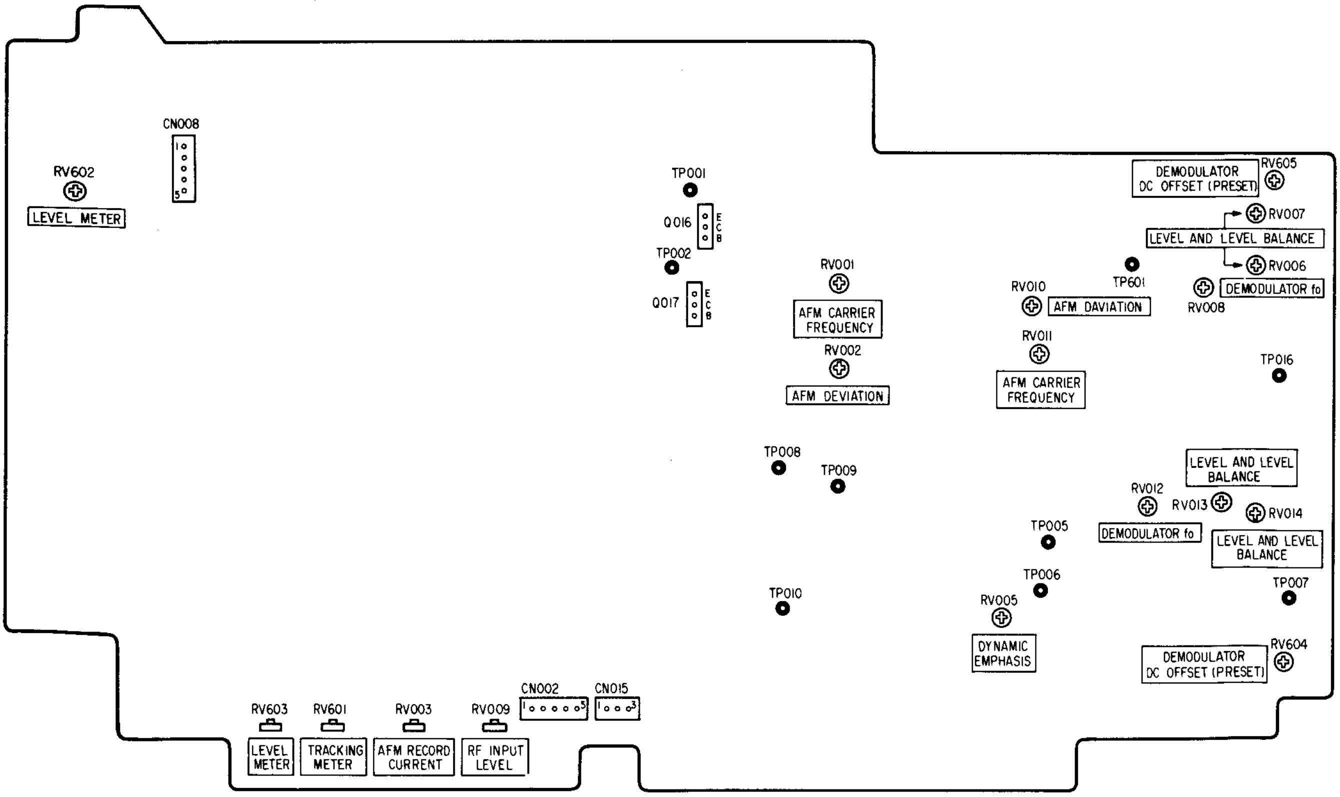
YC-40 board
(Component side)


LV1
SECAM ACK
RV3
JOG PLL
RV2
JOG EXCHANGE CHROMA LEVEL
IC2
15
9
1
16
10
2
RV1
SECAM ACK
IC3
12
6
1
13
19
24
IC9
48
45
40
35
30
25
1
5
10
15
20
24
DROPOUT CONPENSATOR THRESHOLD
RV10
Q38
BCE
RV15
DAVIATION
RV14
CARRIER SET
RV13
WHITE CLIP
RV24
Dark CLIP
RV16
COMPRESS
IC401
14
7
1
15
22
28
RV401
Y COMB
RV4
SHIFT
RV21
AGC
Q41
BCE
RV702
CARRER SHIFT
COUNTER BELLFILTER
LV2
IC4
9
5
1
CHROMA COMB FILTER
RV7
AFC
RV6
AFC OFFSET
CHROMA RECORD CURRENT
RV8
RV501
LV501
IC6
42
38
33
28
22
1
5
10
15
21
RV19
PB VIDEO LEVEL
RV20
EXPAND
BELLFILTER
LV3
RV5
CARRIER BALANCE
CV1
APC
CN4
1
6
CN10
1
6
12
RV9
PILOT BURST SIGNAL
RV22
PEAK CLIP
Q837
BCE

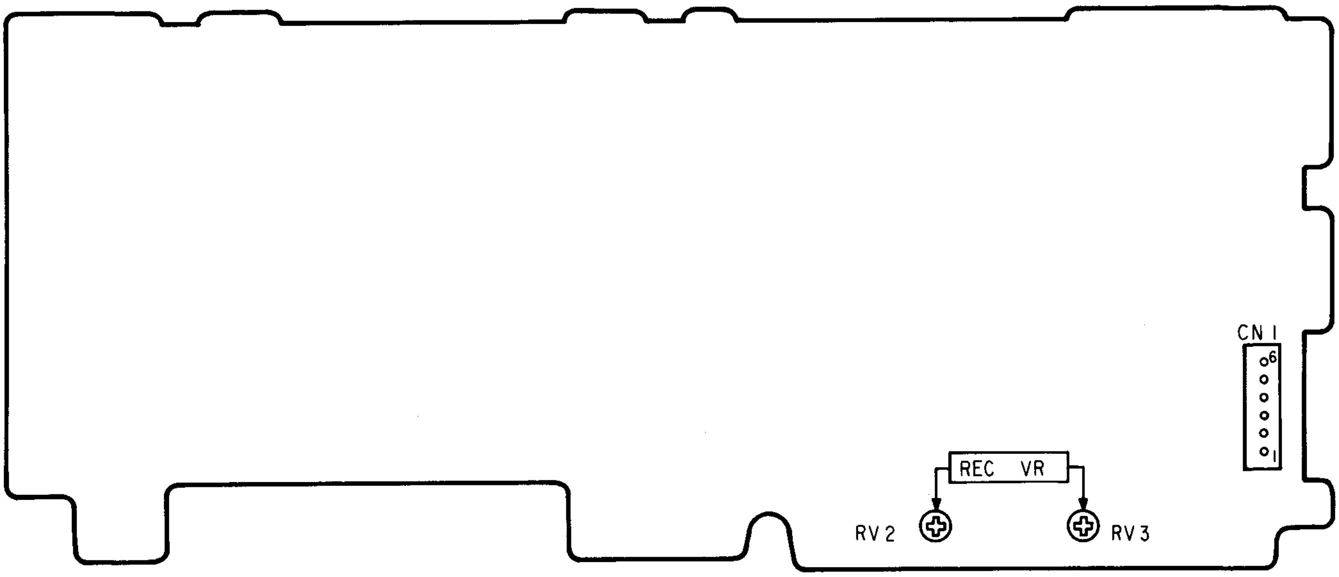
SS-50 board
(Component side)


SLOW fH CORRECTION
RV601
RV603
RV315
TP307
CN306
RV316
SLOW TRACKING CONTROL
IC101
25
40
24
41
1
64
80
65
RV301
TRACKING CENTER
RV302
CAPSTAN FREE SPEED
RV103
QVD
TP301
RV317
x2 MODE BIAS
TP302
24
1
IC301
25
48
TP305
RV308
STILL fH CORRECTION
TP304
RV303
RV304
RV305
RV306
CN309
TP306
DRUM FREE SPEED
RF SWITCHING POSITION
LOCK PHASE
RV307
CUE fH CORRECTION
CN114
RV101
CHARACTOR GENERATOR CLOCK FREQUENCY

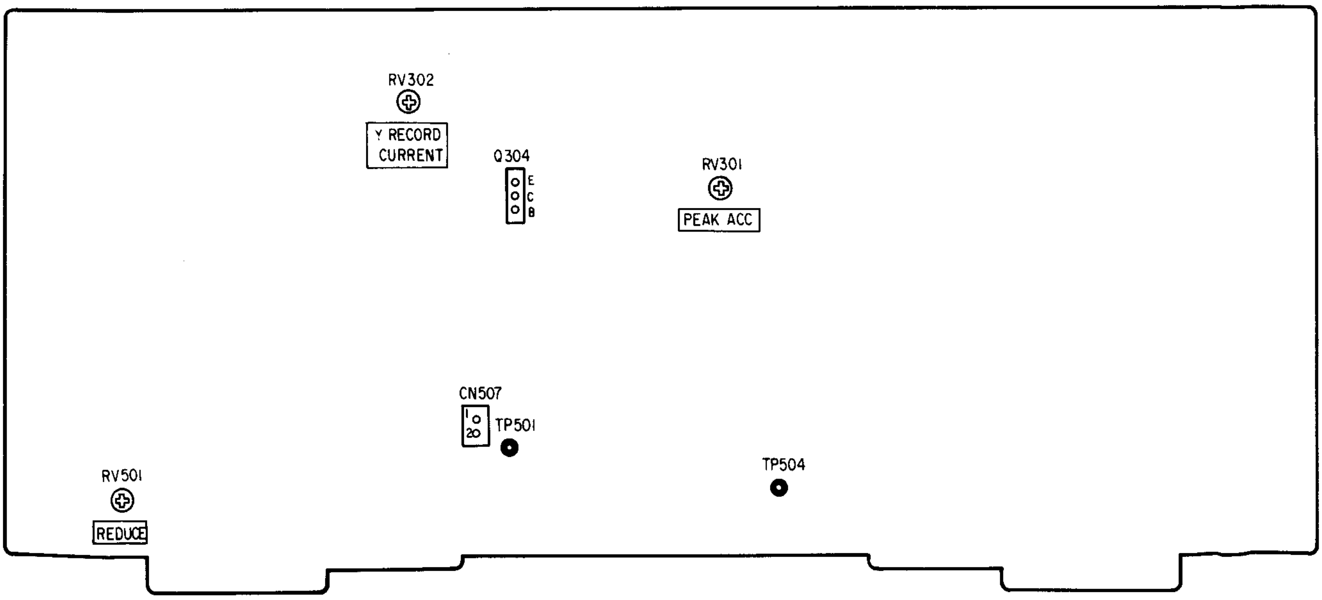
AF-14 board
(Component side)


CN008
RV602
LEVEL METER
TP001
Q016
E
C
B
TP002
Q017
E
C
B
RV001
AFM CARRIER FREQUENCY
RV002
AFM DEVIATION
DEMODULATOR DC OFFSET (PRESET)
RV605
RV007
LEVEL AND LEVEL BALANCE
RV006
TP601
DEMODULATOR fo
RV010
AFM DAVIATION
RV008
RV011
AFM CARRIER FREQUENCY
TP016
TP008
TP009
LEVEL AND LEVEL BALANCE
RV012
RV013
RV014
TP005
DEMODULATOR fo
LEVEL AND LEVEL BALANCE
TP006
TP007
TP010
RV005
DYNAMIC EMPHASIS
DEMODULATOR DC OFFSET (PRESET)
RV604
CN002
CN015
RV603
RV601
RV003
RV009
LEVEL METER
TRACKING METER
AFM RECORD CURRENT
RF INPUT LEVEL

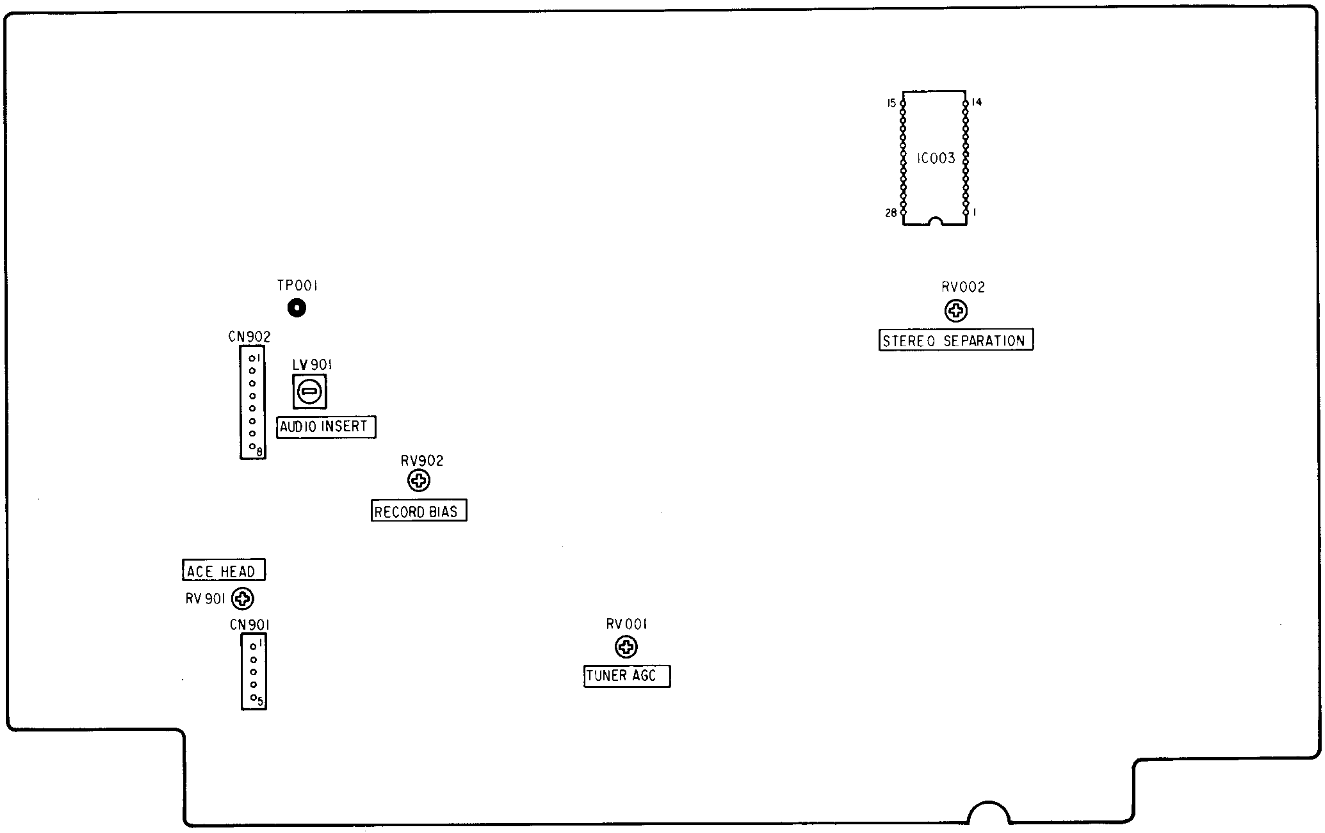
FL-8 board
(Component side)


CN 1
6
1
REC VR
RV 2
RV 3

DH-4 board
(Component side)

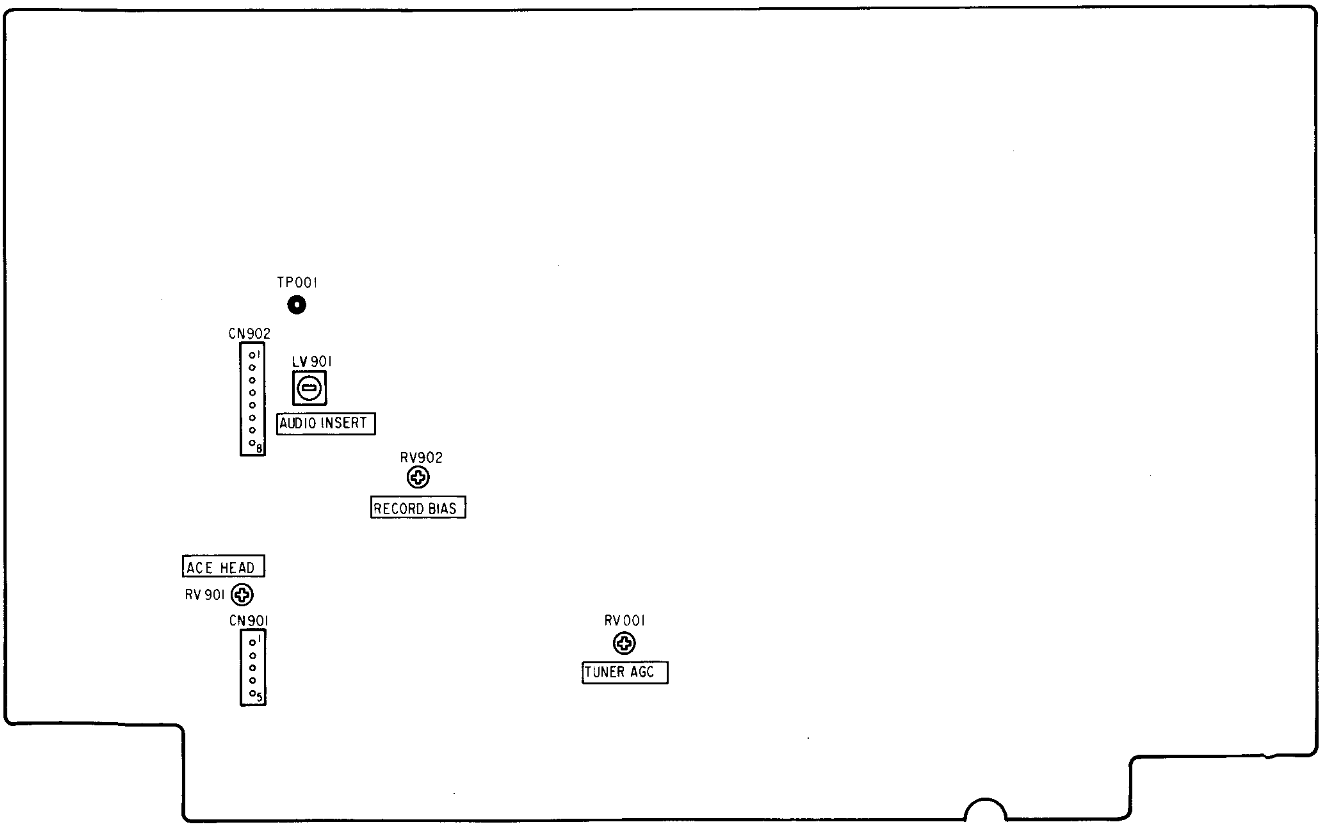

RV302
Y RECORD CURRENT
Q304
E
C
B
RV301
PEAK ACC
CN507
1
2
TP501
TP504
RV501
REDUCE

TA-36 board (ES model)
(Component side)



15
14
IC003
28
1
TP001
RV002
CN902
STEREO SEPARATION
1
LV901
8
AUDIO INSERT
RV902
RECORD BIAS
ACE HEAD
RV901
CN901
RV001
1
5
TUNER AGC

TA-37 board (E model)
(Component side)



TP001
CN902
1
LV901
8
AUDIO INSERT
RV902
RECORD BIAS
ACE HEAD
RV901
CN901
RV001
1
5
TUNER AGC

SL-HF950ES/E
RMT-223

9-972-428-81

Sony Corporation

English
8K 0567-1
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SL-HF950ES/E
RMT-223

SONY®
SERVICE MANUAL

AEP Model
E Model
February, 1986

SUPPLEMENT-2

Subject:
This supplement updates the service manual to include the revised schematic diagrams, printed wiring boards and electrical parts list.
File this supplement with the service manual.

Correction:
There are some incorrect portions on the service manual.
Please correct the disassembly (Section 2-2, 2-3 and 2-6) and adjustment.

[Contents to be modified]
- The pattern has been changed.
- The end of part No. has been changed to 12/13.
  [-12: YC-40 board, SS-50 board, FL-8/9 board]
  [-13: AF-14 board, PJ-3 board, TA-36/37 board]

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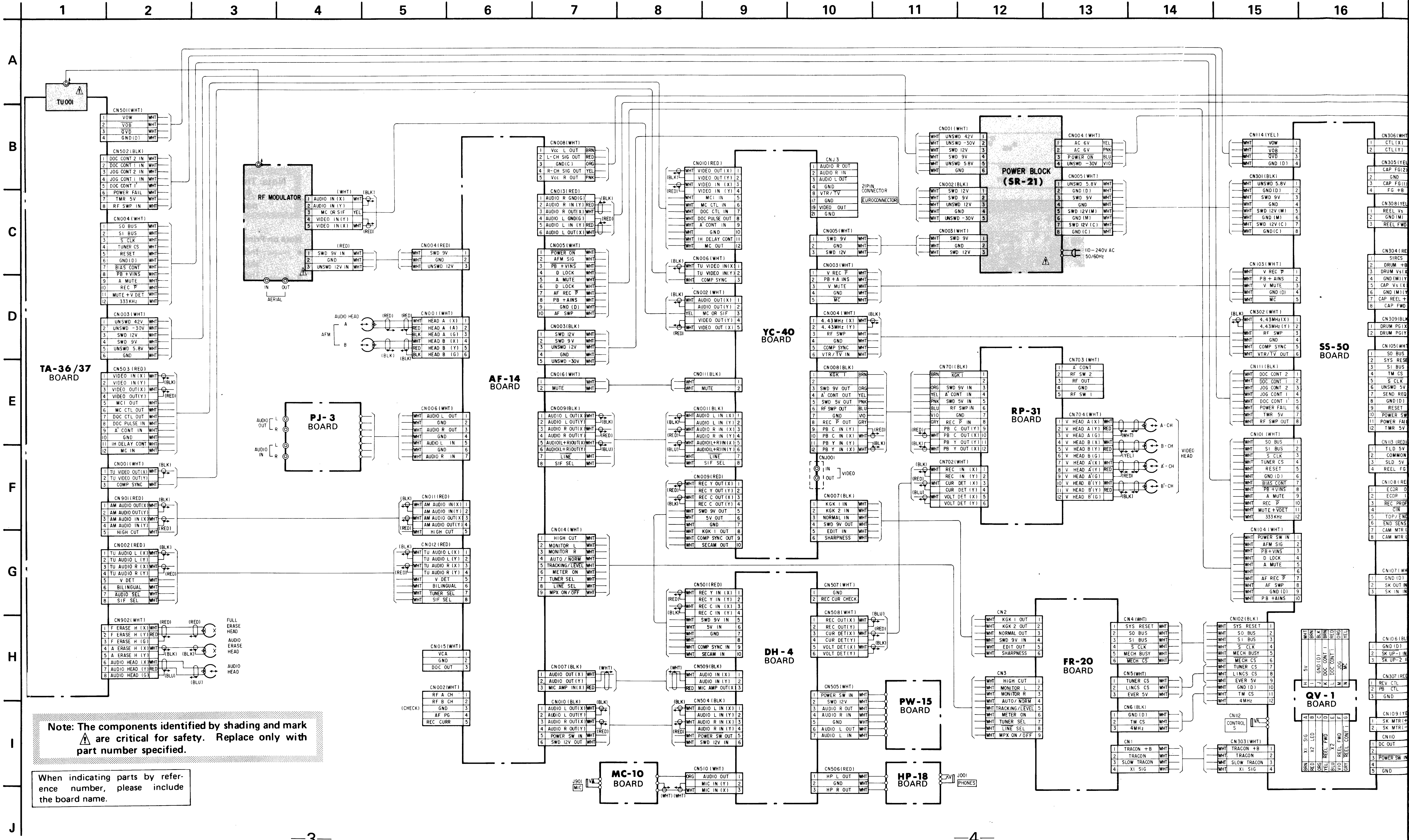
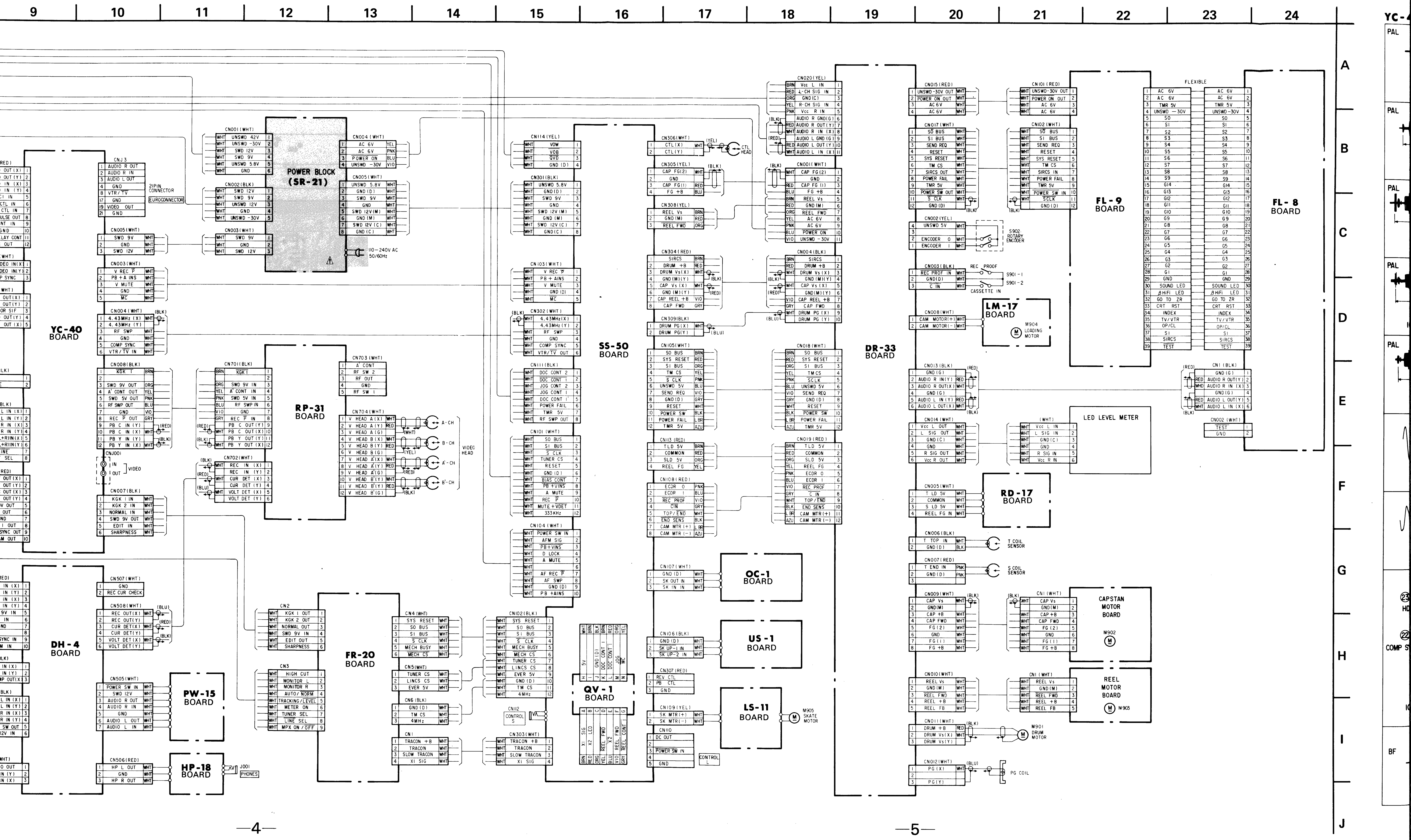
1. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAM

1-1. FRAME SCHEMATIC DIAGRAM


TU001
TA-36/37 BOARD
RF MODULATOR
AERIAL
PJ-3 BOARD
AF-14 BOARD
YC-40 BOARD
21PIN CONNECTOR
EUROCONNECTOR
POWER BLOCK (SR-21)
110-240V AC 50/60Hz
RP-31 BOARD
VIDEO HEAD
SS-50 BOARD
DH-4 BOARD
PW-15 BOARD
HP-18 BOARD
PHONES
MC-10 BOARD
MIC
FR-20 BOARD
QV-1 BOARD
FULL ERASE HEAD
AUDIO ERASE HEAD
AUDIO HEAD
AFM
AUDIO OUT
AUDIO IN

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.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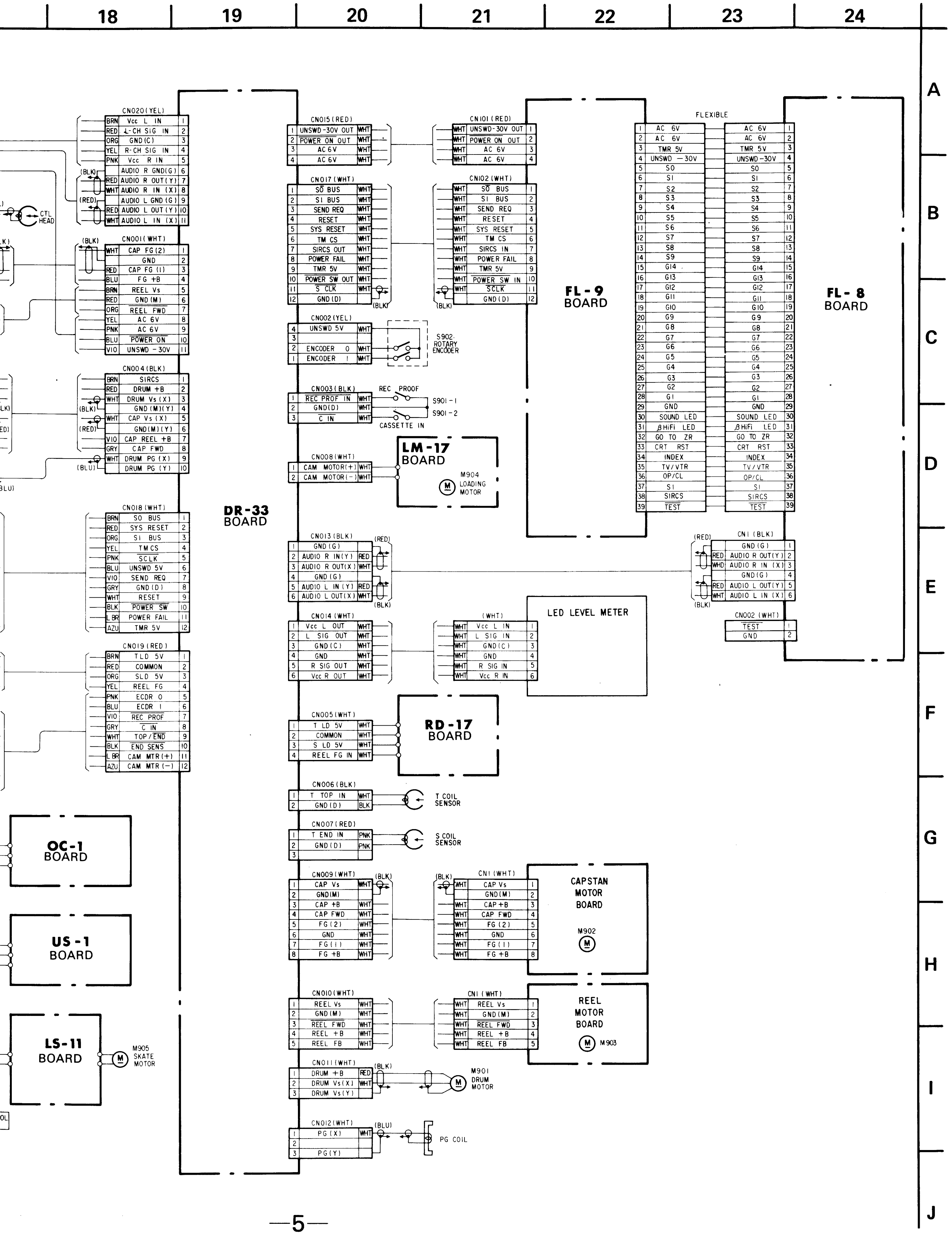
A
B
C
D
E
F
G
H
I
J
YC-40 BOARD
DH-4 BOARD
POWER BLOCK (SR-21)
110-240V AC 50/60Hz
RP-31 BOARD
FR-20 BOARD
PW-15 BOARD
HP-18 BOARD
J001 PHONES
SS-50 BOARD
QV-1 BOARD
OC-1 BOARD
US-1 BOARD
LS-11 BOARD
M905 SKATE MOTOR
DR-33 BOARD
LM-17 BOARD
M904 LOADING MOTOR
RD-17 BOARD
LED LEVEL METER
CAPSTAN MOTOR BOARD
M902
REEL MOTOR BOARD
M903
M901 DRUM MOTOR
PG COIL
T COIL SENSOR
S COIL SENSOR
S902 ROTARY ENCODER
S901-1
S901-2
REC PROOF
CASSETTE IN
FL-9 BOARD
FL-8 BOARD
FLEXIBLE
CTL HEAD
VIDEO HEAD
A-CH
B-CH
A'-CH
B'-CH
21PIN CONNECTOR
EUROCONNECTOR
CNJ3
CNJ001
CN001 (WHT)
CN002 (BLK)
CN003 (WHT)
CN004 (WHT)
CN005 (WHT)
CN007 (BLK)
CN008 (BLK)
CN505 (WHT)
CN506 (RED)
CN507 (WHT)
CN508 (WHT)
CN701 (BLK)
CN702 (WHT)
CN703 (WHT)
CN704 (WHT)
CN2
CN3
CN4 (WHT)
CN5 (WHT)
CN6 (BLK)
CN1
CN102 (BLK)
CN112 CONTROL S
CN303 (WHT)
CN114 (YEL)
CN301 (BLK)
CN103 (WHT)
CN302 (WHT)
CN111 (BLK)
CN101 (WHT)
CN104 (WHT)
CN306 (WHT)
CN305 (YEL)
CN308 (YEL)
CN304 (RED)
CN309 (BLK)
CN105 (WHT)
CN113 (RED)
CN108 (RED)
CN107 (WHT)
CN106 (WHT)
CN307 (RED)
CN109 (YEL)
CN110
CONTROL L
CN020 (YEL)
CN001 (WHT)
CN004 (BLK)
CN018 (WHT)
CN019 (RED)
CN015 (RED)
CN017 (WHT)
CN002 (YEL)
CN003 (BLK)
CN008 (WHT)
CN013 (BLK)
CN014 (WHT)
CN005 (WHT)
CN006 (BLK)
CN007 (RED)
CN009 (WHT)
CN010 (WHT)
CN011 (WHT)
CN012 (WHT)
CN101 (RED)
CN102 (WHT)
CN1 (WHT)
CN1 (BLK)
CN002 (WHT)
YC-
PAL
BF
COMP S


18
19
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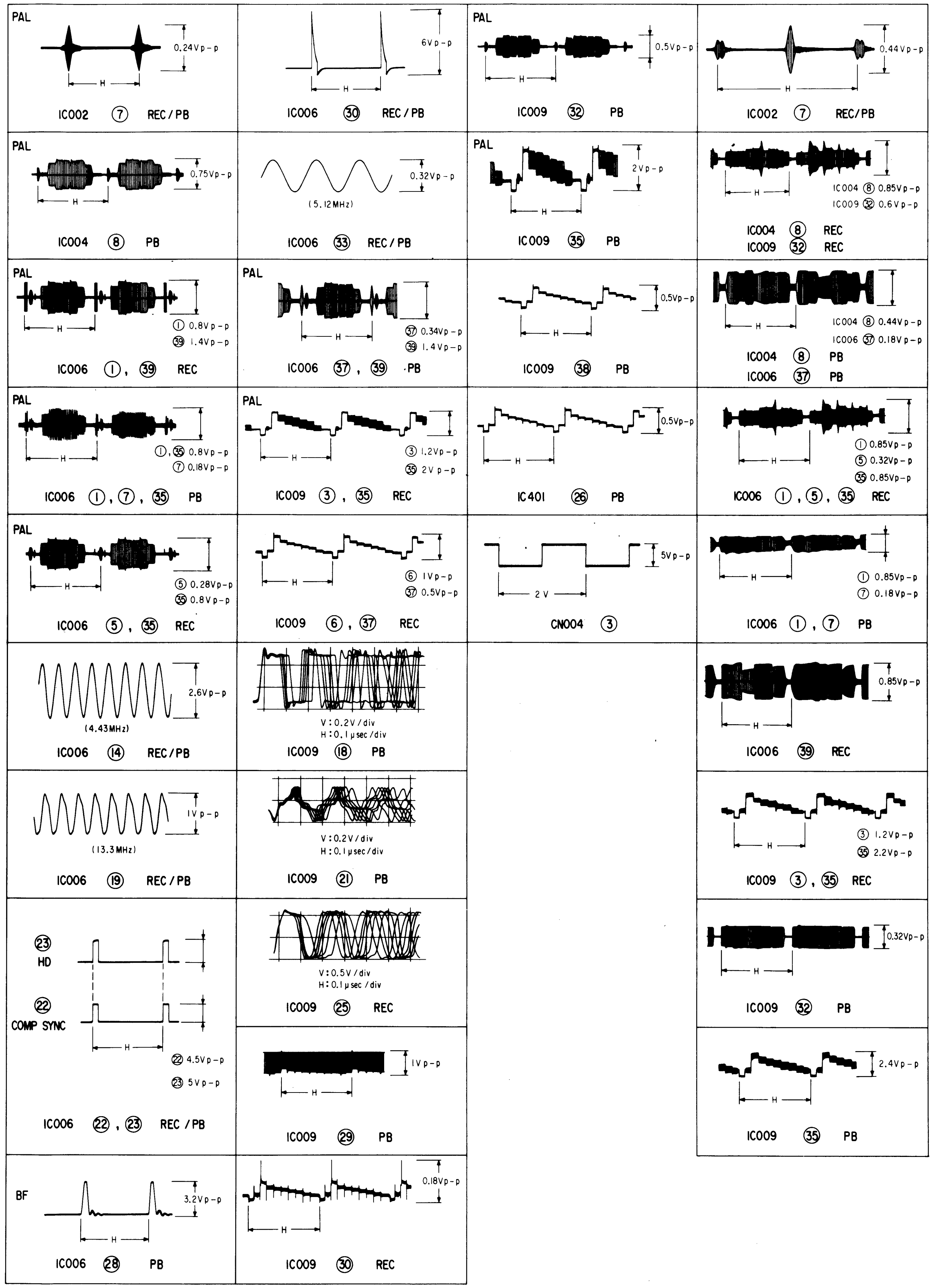
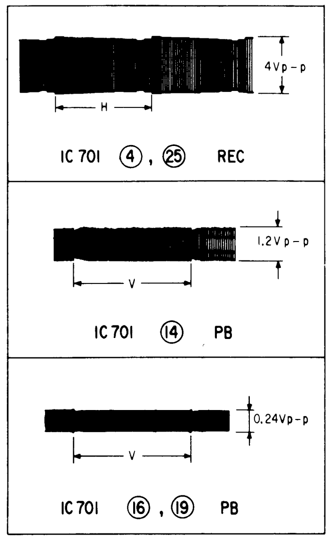
24
A
B
C
D
E
F
G
H
I
J
DR-33 BOARD
FL-9 BOARD
FL-8 BOARD
LM-17 BOARD
RD-17 BOARD
OC-1 BOARD
US-1 BOARD
LS-11 BOARD
CAPSTAN MOTOR BOARD
REEL MOTOR BOARD
LED LEVEL METER
FLEXIBLE
CN020 (YEL)
CN001 (WHT)
CN004 (BLK)
CN018 (WHT)
CN019 (RED)
CN015 (RED)
CN017 (WHT)
CN002 (YEL)
CN003 (BLK)
CN008 (WHT)
CN013 (BLK)
CN014 (WHT)
CN005 (WHT)
CN006 (BLK)
CN007 (RED)
CN009 (WHT)
CN010 (WHT)
CN011 (WHT)
CN012 (WHT)
CN101 (RED)
CN102 (WHT)
CN1 (BLK)
CN002 (WHT)
CN1 (WHT)
S902 ROTARY ENCODER
S901-1
S901-2
REC PROOF
CASSETTE IN
M904 LOADING MOTOR
T COIL SENSOR
S COIL SENSOR
M902
M903
M901 DRUM MOTOR
M905 SKATE MOTOR
PG COIL
CTL HEAD

YC-40 BOARD (PAL / SECAM)

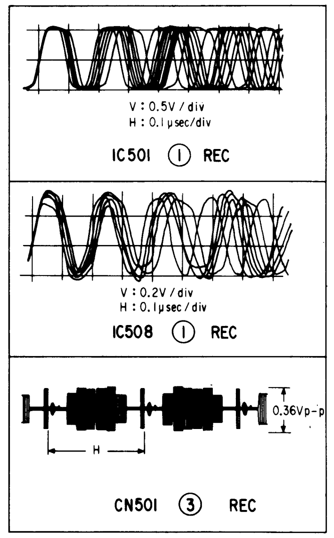
(SECAM)



RP-31 BOARD



DH-4 BOARD



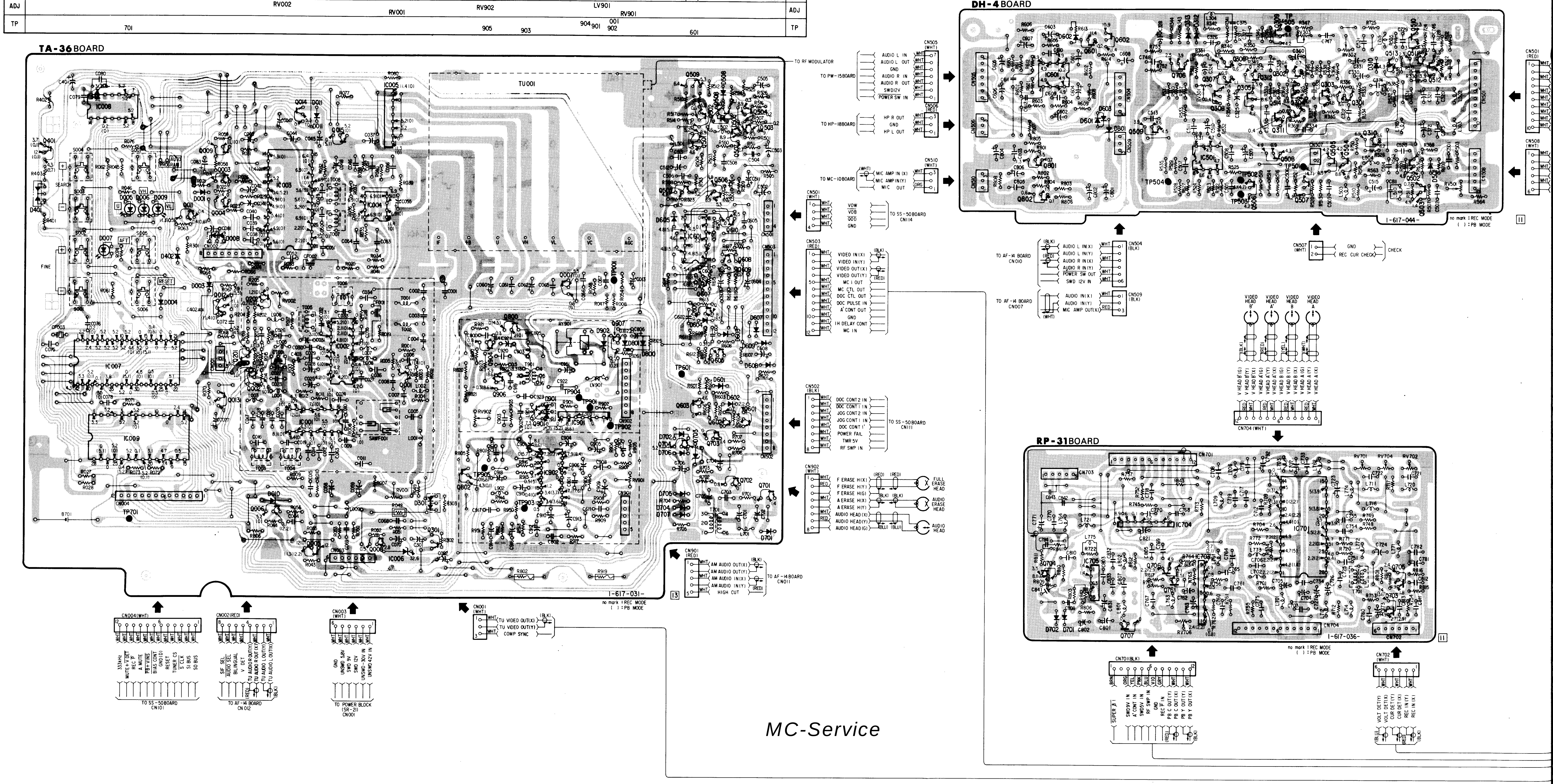
1-2. ES MODEL; YC-40 (Y/CHROMA SIGNAL PROCESS), RP-31 (VIDEO SIGNAL REC/PB AMP), TA-36 (TUNER, AUDIO), DH-4 (A/V HEAD AMP) PRINTED WIRING BOARDS

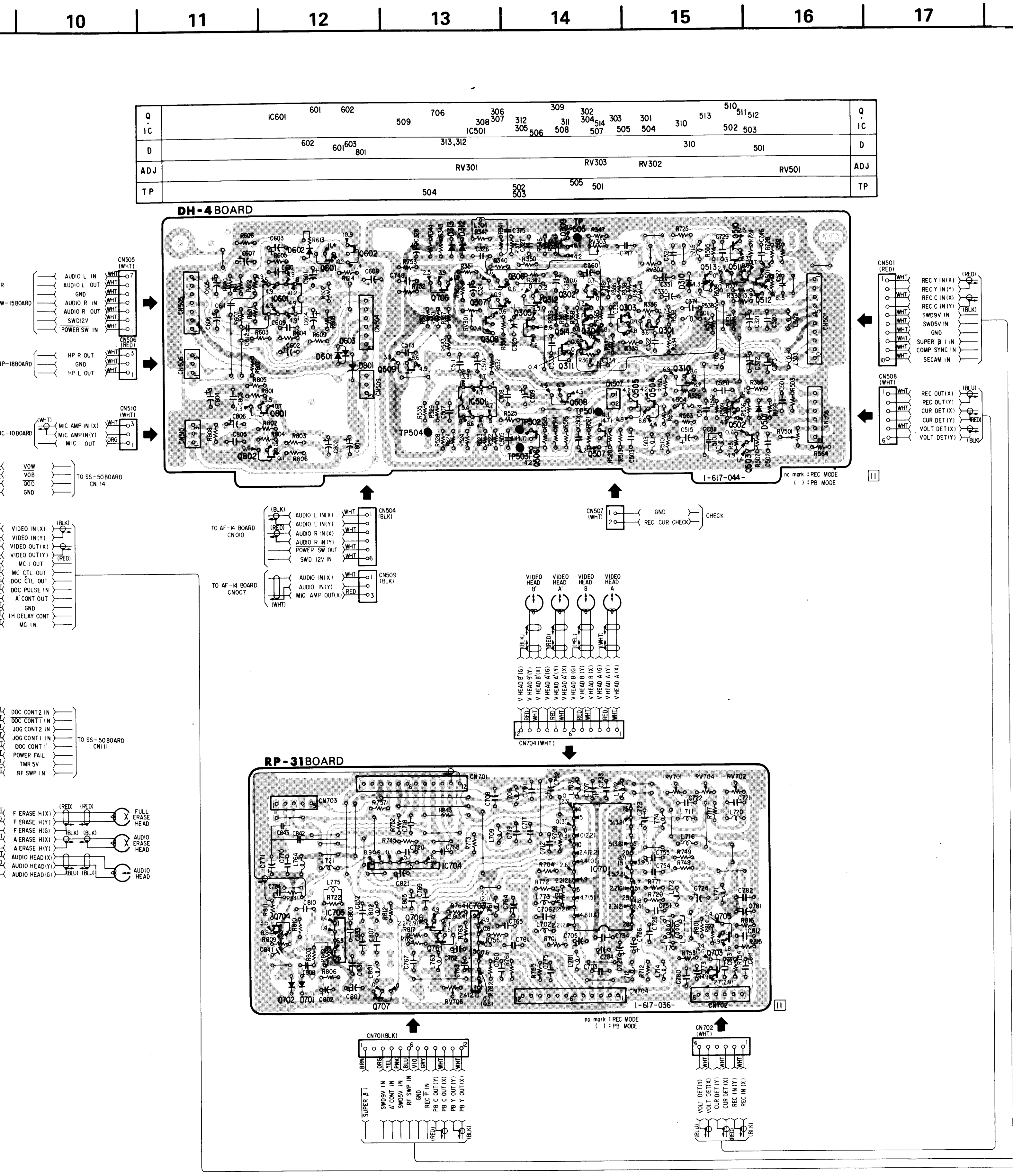
– Ref. No. YC-40 BOARD: 1,000 series, RP-31 BOARD: 6,000 series, TA-36 BOARD: 4,000 series, DH-4 BOARD: 7,000 series –

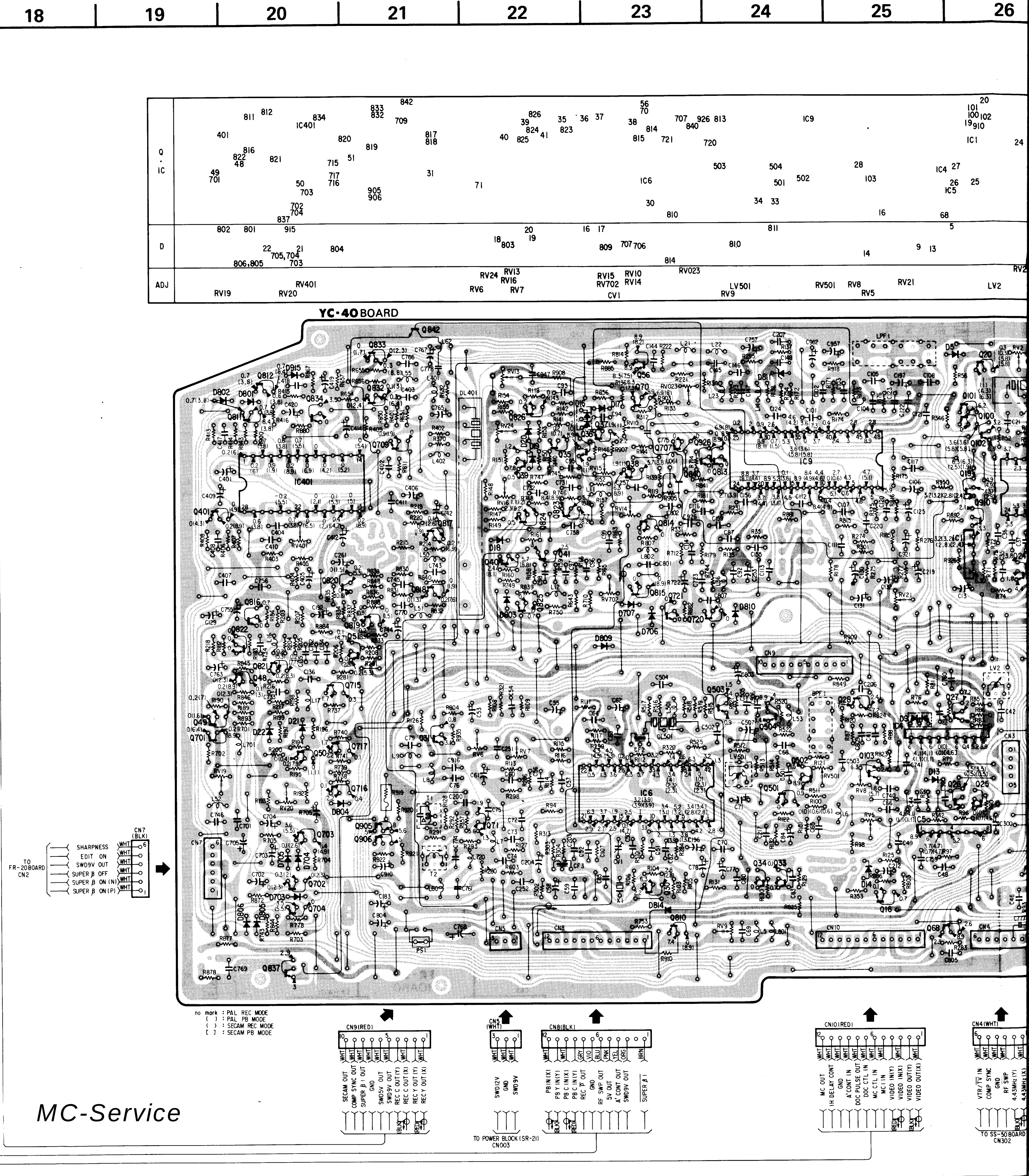
<ES Model>

	1	2	3	4	5	6	7	8	9
Q·IC	401	IC008 IC007 IC009	011 009,003 004 012 013 201,002 202	IC003 014 015 006 IC001 005 IC002	IC005 IC004 001 008 IC006 301	802 904 906 800 901 IC902	007 IC901 907	509 505 501,502 508 506 507 504 IC601 610 607,606 608,609 603 605 704 703 602 702	503 601 701
D	401	007 005 006 009 004	402 001 003 008	011 010	301	901	902 801 800	605 508 505 604,603 601,602 702,706,703 705,704,707	607 609,608 701
ADJ				RV002	RV001	RV902	LV901 RV901		
TP		701				905 903	904 901 001 902	601	

	11	12	13	14	15	16
Q·IC		IC601 601 602	509 706 308 306 307 IC501	312 305 506 309 311 508 302 304 514 507 303 505	301 504 310 513 510 511 502	512 503
D		602 601 603 801	313,312		310	501
ADJ			RV301	RV303	RV302	RV501
TP			504	502 503 505 501		


TA-36 BOARD
DH-4 BOARD
RP-31 BOARD
TU001
TO RF MODULATOR
TO PW-15 BOARD
TO HP-18 BOARD
TO MC-10 BOARD
TO SS-50 BOARD CN114
TO SS-50 BOARD CN111
TO SS-50 BOARD CN101
TO AF-14 BOARD CN012
TO AF-14 BOARD CN011
TO AF-14 BOARD CN010
TO AF-14 BOARD CN007
TO POWER BLOCK (SR-21) CN001
FULL ERASE HEAD
AUDIO ERASE HEAD
AUDIO HEAD
VIDEO HEAD B'
VIDEO HEAD A'
VIDEO HEAD B
VIDEO HEAD A
CHECK
1-617-031-
1-617-044-
1-617-036-
no mark : REC MODE
( ) : PB MODE


10
11
12
13
14
15
16
17
Q
IC
D
ADJ
TP
DH-4 BOARD
CN505 (WHT)
AUDIO L IN
AUDIO L OUT
GND
AUDIO R IN
AUDIO R OUT
SWD12V
POWER SW IN
CN506 (RED)
HP R OUT
GND
HP L OUT
CN510 (WHT)
MIC AMP IN (X)
MIC AMP IN (Y)
MIC OUT
CN501 (RED)
REC Y IN (X)
REC Y IN (Y)
REC C IN (X)
REC C IN (Y)
SWD9V IN
SWD5V IN
GND
SUPER β I IN
COMP SYNC IN
SECAM IN
CN508 (WHT)
REC OUT (X)
REC OUT (Y)
CUR DET (X)
CUR DET (Y)
VOLT DET (X)
VOLT DET (Y)
1-617-044-
no mark : REC MODE
( ) : PB MODE
TO AF-14 BOARD CN010
CN504 (BLK)
AUDIO L IN (X)
AUDIO L IN (Y)
AUDIO R IN (X)
AUDIO R IN (Y)
POWER SW OUT
SWD 12V IN
TO AF-14 BOARD CN007
CN509 (BLK)
AUDIO IN (X)
AUDIO IN (Y)
MIC AMP OUT (X)
CN507 (WHT)
GND
REC CUR CHECK
CHECK
VDW
VDB
GND
TO SS-50 BOARD CN114
VIDEO IN (X)
VIDEO IN (Y)
VIDEO OUT (X)
VIDEO OUT (Y)
MC I OUT
MC CTL OUT
DOC CTL OUT
DOC PULSE IN
A'CONT OUT
GND
1H DELAY CONT
MC IN
DOC CONT 2 IN
DOC CONT 1 IN
JOG CONT 2 IN
JOG CONT 1 IN
DOC CONT I'
POWER FAIL
TMR 5V
RF SWP IN
TO SS-50 BOARD CN111
F ERASE H(X)
F ERASE H(Y)
F ERASE H(G)
A ERASE H(X)
A ERASE H(Y)
AUDIO HEAD (X)
AUDIO HEAD (Y)
AUDIO HEAD (G)
FULL ERASE HEAD
AUDIO ERASE HEAD
AUDIO HEAD
VIDEO HEAD B'
VIDEO HEAD A'
VIDEO HEAD B
VIDEO HEAD A
CN704 (WHT)
RP-31 BOARD
1-617-036-
no mark : REC MODE
( ) : PB MODE
CN701 (BLK)
SUPER β I
SWD9V IN
A'CONT IN
SWD5V IN
RF SWP IN
GND
REC P IN
PB C OUT (X)
PB C OUT (Y)
PB Y OUT (X)
PB Y OUT (Y)
CN702 (WHT)
VOLT DET (Y)
VOLT DET (X)
CUR DET (Y)
CUR DET (X)
REC IN (Y)
REC IN (X)


18
19
20
21
22
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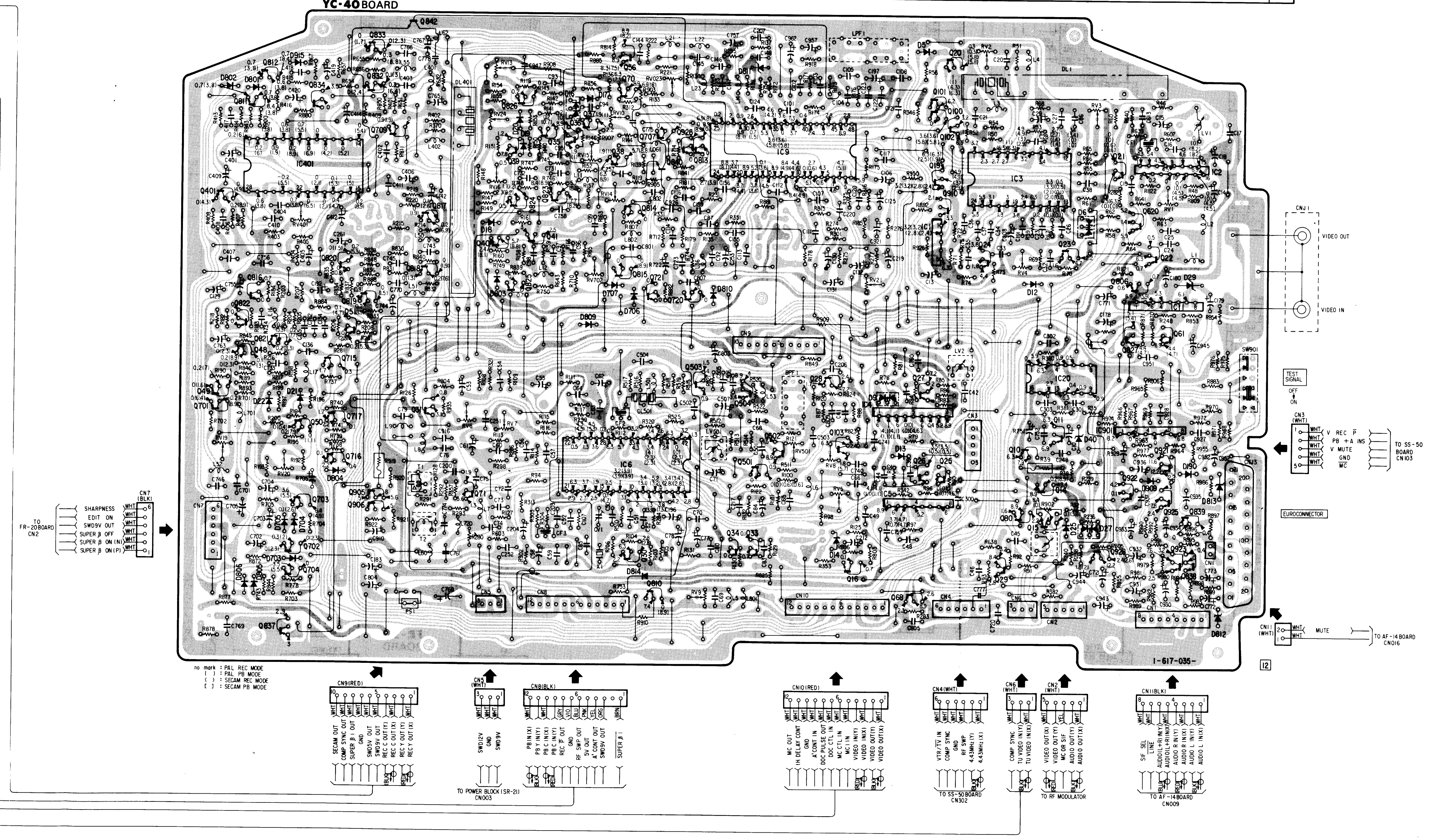
24
25
26
Q
IC
D
ADJ
YC-40 BOARD
TO FR-20 BOARD CN2
CN7 (BLK)
SHARPNESS
EDIT ON
SWD9V OUT
SUPER β OFF
SUPER β ON (N)
SUPER β ON (P)
no mark : PAL REC MODE
( ) : PAL PB MODE
( ) : SECAM REC MODE
[ ] : SECAM PB MODE
CN9 (RED)
SECAM OUT
COMP SYNC OUT
SUPER β I OUT
GND
SWD9V OUT
REC C OUT (X)
REC C OUT (Y)
REC Y OUT (Y)
REC Y OUT (X)
CN5 (WHT)
SWD12V
GND
SWD9V
TO POWER BLOCK (SR-21) CN003
CN8 (BLK)
PB Y IN (X)
PB Y IN (Y)
PB C IN (X)
PB C IN (Y)
RF SWP OUT
GND
5V OUT
A'CONT OUT
SWD9V OUT
SUPER β I
CN10 (RED)
MC OUT
1H DELAY CONT
GND
A'CONT IN
DOC PULSE OUT
DOC CTL IN
MC CTL IN
MC I IN
VIDEO IN (Y)
VIDEO IN (X)
VIDEO OUT (Y)
VIDEO OUT (X)
CN4 (WHT)
COMP SYNC
GND
RF SWP
4.43MHz
TO SS-50 BOARD CN302

MC-Service

	19	20	21	22	23	24	25	26	27	28
Q · IC	49, 701	811, 812, IC401, 834, 401, 816, 822, 48, 821, 715, 717, 716, 50, 703, 702, 704, 837	833, 832, 842, 709, 820, 819, 51, 817, 818, 31, 905, 906	826, 39, 35, 824, 41, 823, 40, 825, 71	36, 37, 56, 70, 38, 814, 707, 840, 815, 721, IC6, 30, 810	926, 813, 720, 503, 504, 501, 502, 34, 33, IC9	28, 103, 16, IC4, 68	20, 101, 100, 102, 19, 910, IC1, 27, 26, IC5, 25, 24, IC3, 29	10, 80, 14, 15, 11, 23, IC20, 928, 21, 827, 922	IC2, 620, 22, 806, IC11, 61, IC901, 921, 925, 839, 923, 838
D		802, 801, 915, 22, 21, 705, 704, 806, 805, 703, 804		18, 803, 20, 19	16, 17, 809, 707, 706, 814	811, 810	14, 9, 13	5	12, 6, 25, 40, 27	909, 29, 190, 813, 812
ADJ		RV19, RV401, RV20		RV24, RV13, RV16, RV6, RV7	RV15, RV702, RV10, RV14, CV1, RV023	LV501, RV9, RV501	RV8, RV5, RV21	LV2, RV2, RV4	LV3, RV3, RV1	LV1


YC-40 BOARD
TO FR-20 BOARD CN2
SHARPNESS
EDIT ON
SWD9V OUT
SUPER β OFF
SUPER β ON (N)
SUPER β ON (P)
CN7 (BLK)
WHT
CNJ1
VIDEO OUT
VIDEO IN
TEST SIGNAL
OFF
ON
CN3 (WHT)
V REC P̄
PB +A INS
V MUTE
GND
M̄C̄
TO SS-50 BOARD CN103
EUROCONNECTOR
CN11 (WHT)
MUTE
TO AF-14 BOARD CN016
12
1-617-035-
CN9 (RED)
SECAM OUT
COMP SYNC OUT
SUPER β I OUT
GND
SWD5V OUT
SWD9V OUT
REC C OUT (Y)
REC C OUT (X)
REC Y OUT (Y)
REC Y OUT (X)
(BLK)
(RED)
CN5 (WHT)
SWD12V
GND
SWD9V
TO POWER BLOCK (SR-21) CN003
CN8 (BLK)
PB IN (X)
PB Y IN (Y)
PB C IN (X)
PB C IN (Y)
REC P̄ OUT
GND
RF SWP OUT
5V OUT
A' CONT OUT
SWD9V OUT
S̄ŪP̄ĒR̄ β̄ Ī
GRY
VIO
BLU
PNK
YEL
ORG
BRN
CN10 (RED)
MC OUT
1H DELAY CONT
GND
A'CONT IN
DOC PULSE OUT
DOC CTL IN
MC CTL IN
MC I IN
VIDEO IN (Y)
VIDEO IN (X)
VIDEO OUT (Y)
VIDEO OUT (X)
CN4 (WHT)
VTR/T̄V̄ IN
COMP SYNC
GND
RF SWP
4.43MHz (Y)
4.43MHz (X)
TO SS-50 BOARD CN302
CN6 (WHT)
COMP SYNC
TU VIDEO IN (Y)
TU VIDEO IN (X)
CN2 (WHT)
VIDEO OUT (X)
VIDEO OUT (Y)
MC OR SIF
AUDIO OUT (Y)
AUDIO OUT (X)
TO RF MODULATOR
CN1 (BLK)
SIF SEL L̄ĪN̄Ē
AUDIO (L+R) IN (Y)
AUDIO (L+R) IN (X)
AUDIO R IN (Y)
AUDIO R IN (X)
AUDIO L IN (Y)
AUDIO L IN (X)
TO AF-14 BOARD CN009

no mark : PAL REC MODE
( ) : PAL PB MODE
⟨ ⟩ : SECAM REC MODE
[ ] : SECAM PB MODE

Note on Schematic Diagram:

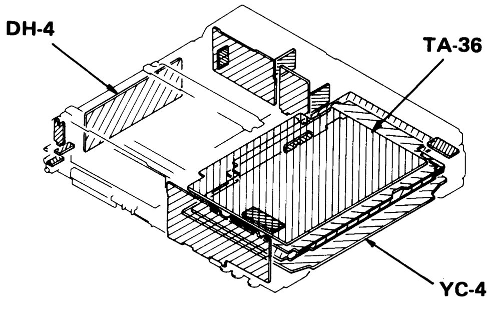
- All resistors are in ohms, $\frac{1}{6}$W unless otherwise noted. kΩ: 1000 Ω, MΩ: 1000 kΩ
- All capacitors are in μF unless otherwise noted. p: μμF 50WV or less are not indicated except for electrolytics.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : nonflammable resistor.
- : fusible resistor.
- The red lines show the main voltages.
- All voltages are dc measured with a VOM (10 MΩ).
- ━━ : B+ bus.

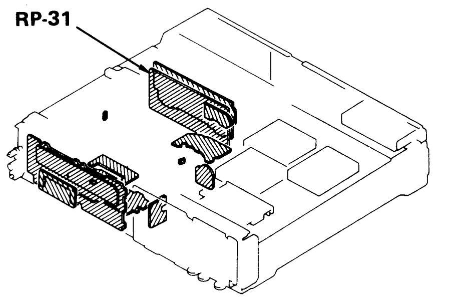
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note on Printed Wiring Board:

- ○— : Indicates a leadwire mounted on the component side.
- ●— : Indicates a leadwire mounted on the printed side.
- ░ : soldering side.
- ▒ : B+ pattern
- Digital transistor (YC-40: Q15, 25, 31, 35, 100, 101, 102, 702, 704, 707, 709, 720, 721, 810, 811, 812, 813, 814, 815, 826, 834, 910, 922, 926. RP-31: Q707. DH-4: Q311, 312. TA-36: Q003, 004, 006, 013, 014, 015, 301, 508, 601, 604, 605, 610, 703, 800, 802, 901) transistors with resistors.
  Refer to the YC-40, RP-31, DH-4, TA-36 boards schematic diagram for digital transistor.

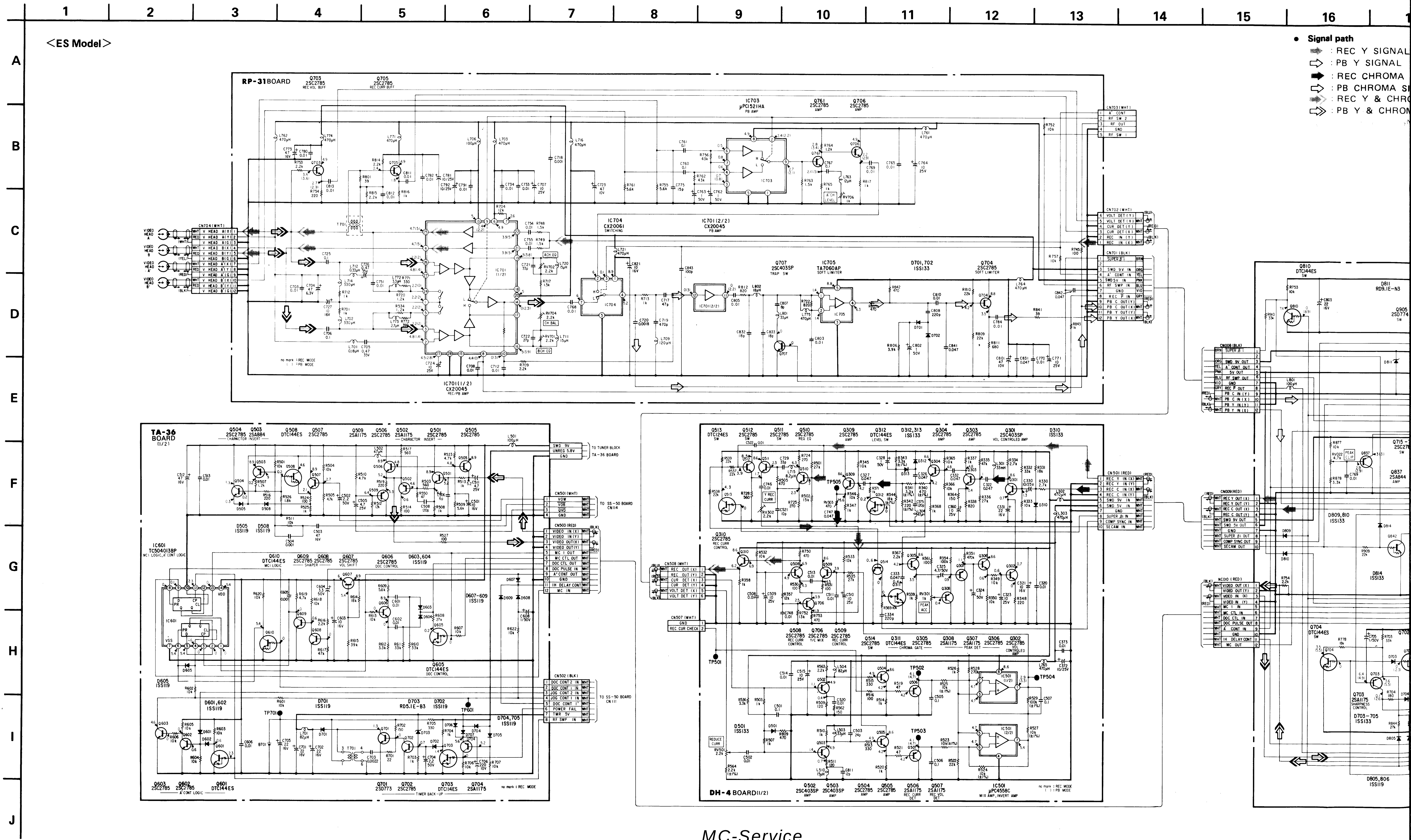
When indicating parts by reference number, please include the board name.


DH-4
TA-36
YC-40

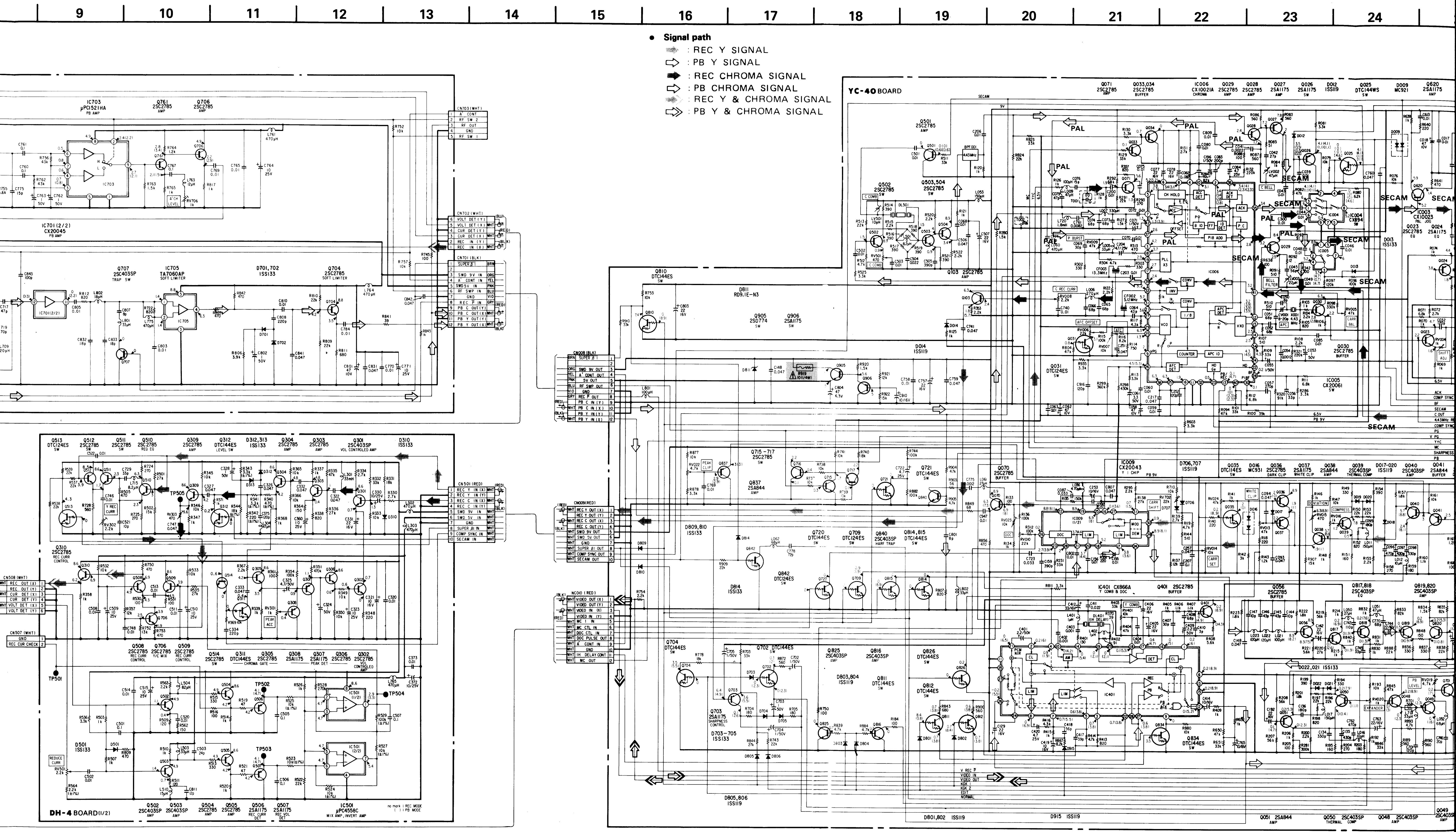


ES MODEL; YC-40 (Y/CHROMA SIGNAL PROCESS), RP-31 (VIDEO SIGNAL REC/PB AMP), TA-36 (TUNER, AUDIO); DH-4 (A/V HEAD AMP) SCHEMATIC DIAGRAMS

– Ref. No. YC-40 BOARD: 1,000 series, RP-31 BOARD: 6,000 series, TA-36 BOARD: 4,000 series, DH-4 BOARD: 7,000 series –



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I J
<ES Model>
Signal path
: REC Y SIGNAL
: PB Y SIGNAL
: REC CHROMA
: PB CHROMA
: REC Y & CHRO
: PB Y & CHROM
RP-31 BOARD
Q703 2SC2785 REC VOL BUFF
Q705 2SC2785 REC CURR BUFF
IC703 μPC1521HA PB AMP
Q761 2SC2785 AMP
Q706 2SC2785 AMP
CN703 (WHT)
CN702 (WHT)
CN701 (BLK)
CN704 (WHT)
VIDEO HEAD A
VIDEO HEAD B
VIDEO HEAD A'
VIDEO HEAD B'
IC704 CX20061 SWITCHING
IC701 (2/2) CX20045 PB AMP
Q707 2SC403SP TRAP SW
IC705 TA7060AP SOFT LIMITER
D701, 702 1SS133
Q704 2SC2785 SOFT LIMITER
IC701 (1/2) CX20045 REC/PB AMP
no mark : REC MODE ( ) : PB MODE
TA-36 BOARD (1/2)
Q504 2SC2785
Q503 2SA884
Q508 DTC144ES
Q507 2SC2785
Q509 2SA1175
Q506 2SC2785
Q502 2SA1175
Q501 2SC2785
Q505 2SC2785
CHARACTOR INSERT
CN501 (WHT)
TO SS-50 BOARD CN114
CN503 (RED)
TO TUNER BLOCK
TA-36 BOARD
IC601 TC5040I3BP MCI LOGIC, A' CONT LOGIC
Q610 DTC144ES MCI LOGIC
Q609 2SC2785
Q608 2SC2785 SHAPER
Q607 2SC2785 VOL SHIFT
Q606 2SC2785 DOC CONTROL
D603, 604 1SS119
D505 1SS119
D508 1SS119
D607–609 1SS119
Q605 DTC144ES DOC CONTROL
D605 1SS119
D601, 602 1SS119
D701 1SS119
D703 RD5.1E-B3
D702 1SS119
D704, 705 1SS119
CN502 (BLK)
TO SS-50 BOARD CN111
Q603 2SC2785
Q602 2SC2785 A' CONT LOGIC
Q601 DTC144ES
Q701 2SD773
Q702 2SC2785
Q703 DTC114ES
Q704 2SA1175
TIMER BACK-UP
TP701
TP601
DH-4 BOARD (1/2)
Q513 DTC124ES SW
Q512 2SC2785 SW
Q511 2SC2785 SW
Q510 2SC2785 REC EQ
Q309 2SC2785 AMP
Q312 DTC144ES LEVEL SW
D312, 313 1SS133
Q304 2SC2785 AMP
Q303 2SC2785 AMP
Q301 2SC403SP VOL CONTROLED AMP
D310 1SS133
CN501 (RED)
Q310 2SC2785 REC CURR CONTROL
CN508 (WHT)
CN507 (WHT)
REC CUR CHECK
TP505
TP501
TP502
TP503
TP504
Q508 2SC2785 REC CURR CONTROL
Q706 2SC2785 Y/C MIX
Q509 2SC2785 REC CURR CONTROL
Q514 2SC2785 SW
Q311 DTC144ES
Q305 2SC2785 CHROMA GATE
Q308 2SA1175
Q307 2SA1175 PEAK DET
Q306 2SC2785
Q302 2SC2785 VOL CONTROLED AMP
D501 1SS133
Q502 2SC403SP AMP
Q503 2SC403SP AMP
Q504 2SC2785 AMP
Q505 2SC2785 AMP
Q506 2SA1175 REC CURR DET
Q507 2SA1175 REC VOL DET
IC501 μPC4558C MIX AMP, INVERT AMP
Q810 DTC144ES SW
D811 RD9.1E-N3
Q905 2SD774
CN008 (BLK)
CN009 (RED)
CN010 (RED)
D809, 810 1SS133
D814 1SS133
Q704 DTC144ES SW
Q703 2SA1175 SHARPNESS CONTROL
D703–705 1SS133
D805, 806 1SS119
Q715
Q837 2SA844 AMP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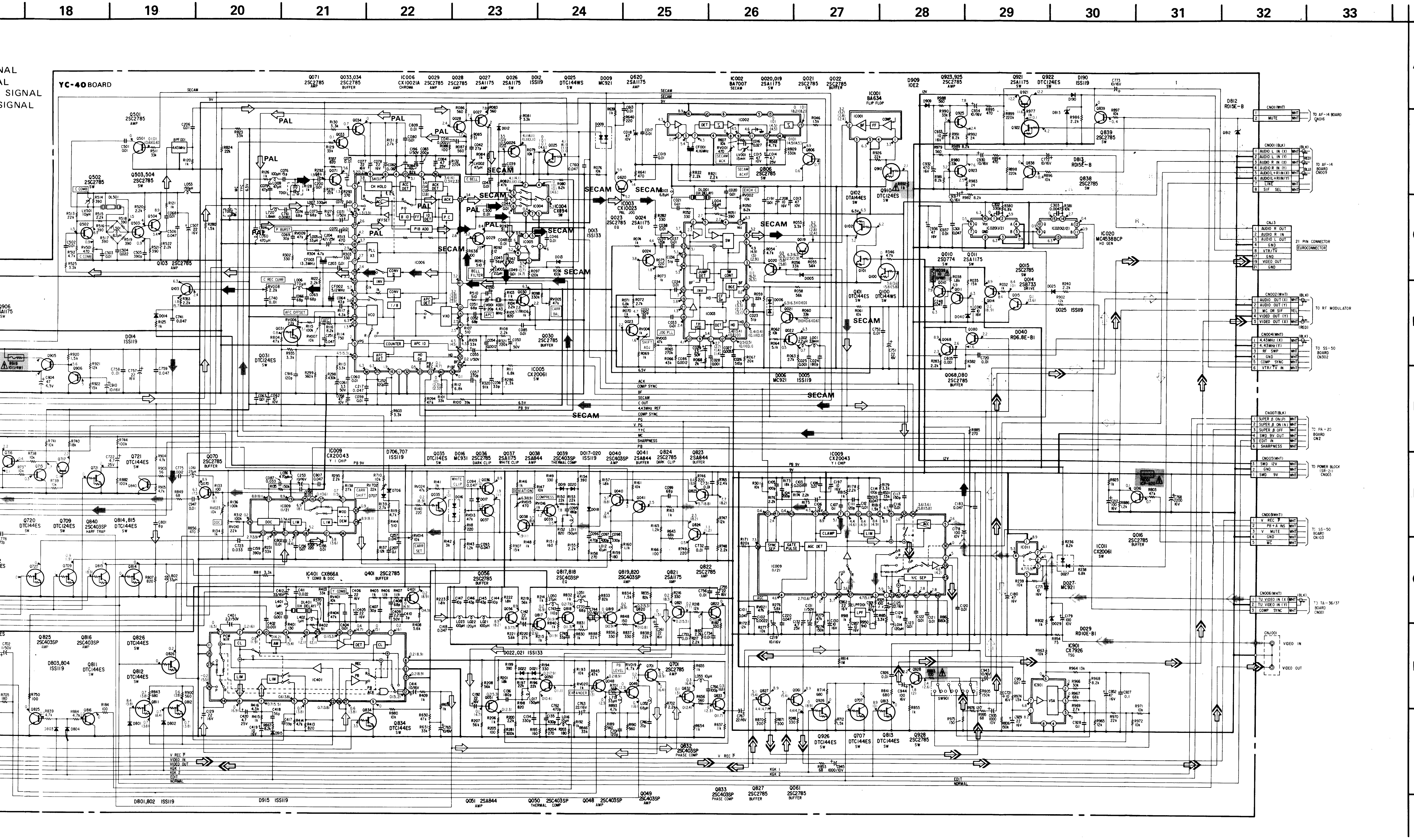
24
YC-40 BOARD
DH-4 BOARD(1/2)
IC703 μPC1521HA PB AMP
IC701(2/2) CX20045 PB AMP
IC705 TA7060AP SOFT LIMITER
D701,702 ISS133
Q704 2SC2785 SOFT LIMITER
Q707 2SC403SP TRAP SW
Q761 2SC2785 AMP
Q706 2SC2785 AMP
CN703 (WHT)
CN702 (WHT)
CN701 (BLK)
CN501 (RED)
CN508 (WHT)
CN507 (WHT)
CN008 (BLK)
CN009 (RED)
NC010 (RED)
Q810 DTC144ES SW
D811 RD9.1E-N3
Q905 2SD774 SW
Q906 2SA1175 SW
D014 ISS119
Q501 2SC2785 AMP
Q502 2SC2785 SW
Q503,504 2SC2785 SW
Q103 2SC2785 AMP
IC006 CX10021A CHROMA
IC009 CX20043 Y/C 1 CHIP
IC401 CX866A Y COMB & DOC
Q401 2SC2785 BUFFER
IC501 μPC4558C MIX AMP, INVERT AMP
IC005 CX20061 SW
IC003 CX10023 PAL JOC
IC004 CX894
PAL
SECAM
TP501
TP502
TP503
TP504
TP505
D801,802 ISS119
D915 ISS119
D805,806 ISS119
D703-705 ISS133
D809,810 ISS133
D814 ISS133
D022,021 ISS133
no mark : REC MODE
( ) : PB MODE

- **Signal path**
- : REC Y SIGNAL
- : PB Y SIGNAL
- : REC CHROMA SIGNAL
- : PB CHROMA SIGNAL
- : REC Y & CHROMA SIGNAL
- : PB Y & CHROMA SIGNAL


NAL
AL
SIGNAL
SIGNAL
YC-40 BOARD
18
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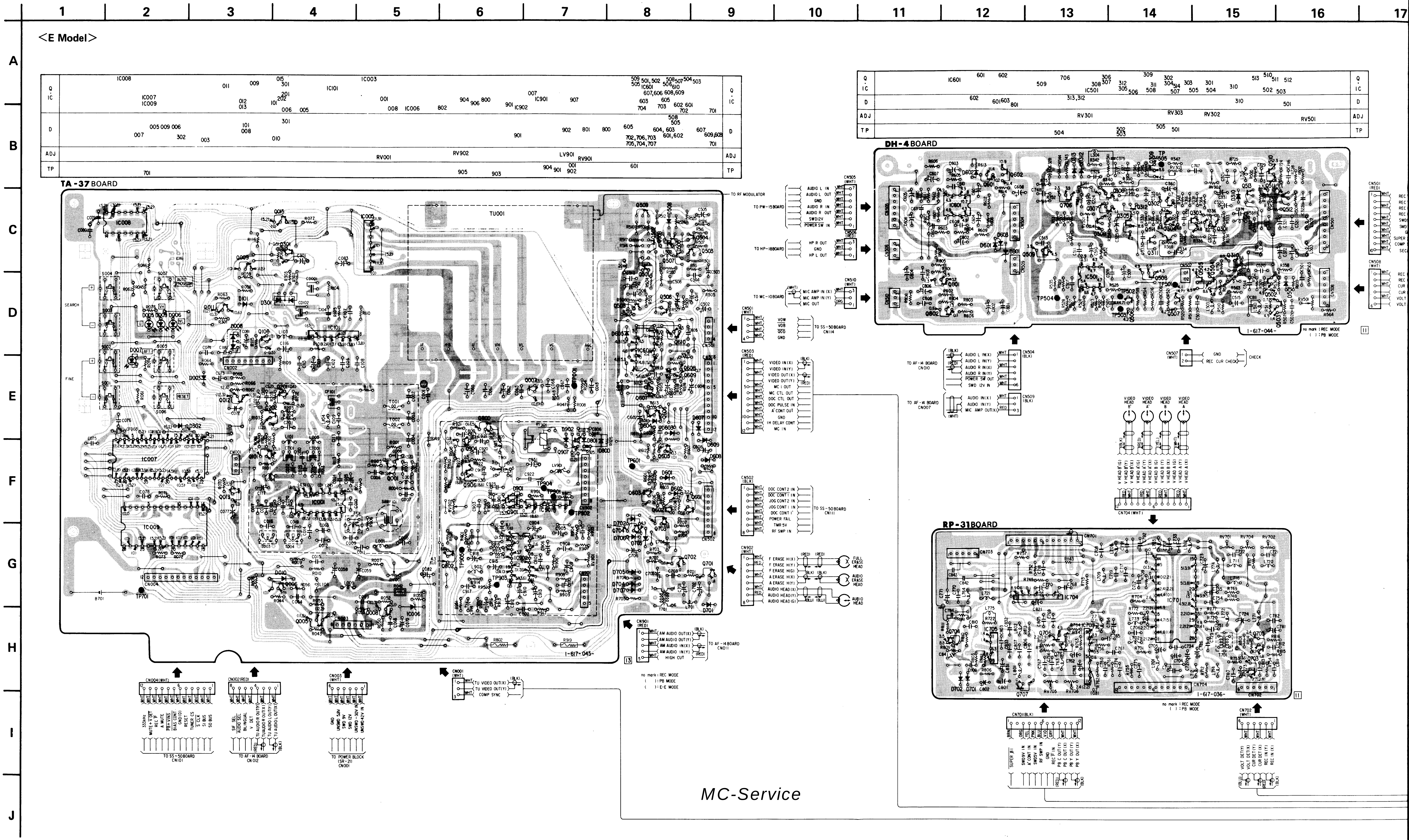
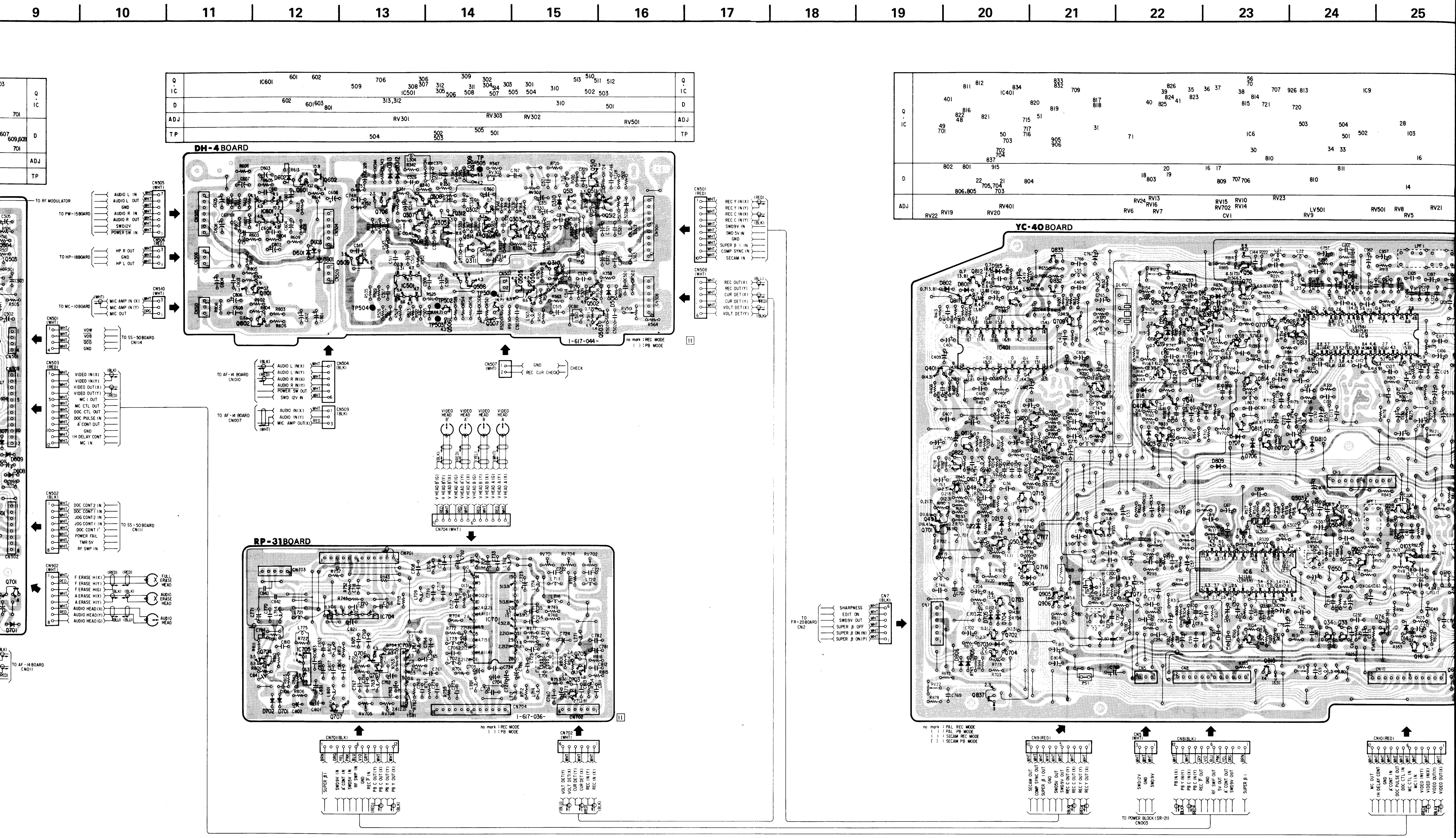
27
28
29
30
31
32
33
A
B
C
D
E
F
G
H
I
IC006 CX10021A CHROMA
IC002 BA7007 SECAM
IC001 BA634 FLIP FLOP
IC003 CX10023
IC004 CX894
IC005 CX20061
IC009 CX20043 Y I CHIP
IC401 CX866A Y COMB & DOC
IC011 CX20061
IC020 MC4538BCP HD GEN
IC901 CX7926 TSG
PAL
SECAM
CN001 (WHT)
TO AF-14 BOARD CN016
CN001 (BLK)
CNJ3
21 PIN CONNECTOR EURO CONNECTOR
CN002 (WHT)
TO RF MODULATOR
CN004 (WHT)
TO SS-50 BOARD CN302
CN007 (BLK)
TO FR-20 BOARD CN2
CN005 (WHT)
TO POWER BLOCK
CN003 (WHT)
TO SS-50 BOARD CN103
CN006 (WHT)
TO TA-36/37 BOARD CN001
CNJ001
VIDEO IN
VIDEO OUT
V REC
VIDEO IN
VIDEO OUT
KGK 1
KGK 2
EDIT
NORMAL
D801,802 1SS119
D915 1SS119
Q051 2SA844 AMP
Q050 2SC403SP THERMAL COMP
Q048 2SC403SP AMP
Q049 2SC403SP AMP
Q833 2SC403SP PHASE COMP
Q827 2SC2785 BUFFER
Q061 2SC2785 BUFFER

1-3. E MODEL; YC-40 (Y/CHROMA SIGNAL PROCESS), RP-31 (VIDEO SIGNAL REC/PB AMP), TA-37 (TUNER, AUDIO), DH-4 (A/V HEAD AMP) PRINTED WIRING BOARDS

– Ref. No. YC-40 BOARD: 1,000 series, RP-31 BOARD: 6,000 series, TA-37 BOARD: 5,000 series, DH-4 BOARD: 7,000 series –



<E Model>
TA-37 BOARD
DH-4 BOARD
RP-31 BOARD
TU001
1-617-045-
1-617-044-
1-617-036-
CN004 (WHT)
TO SS-50BOARD CN101
CN002 (RED)
TO AF-14 BOARD CN012
CN003 (WHT)
TO POWER BLOCK (SR-21) CN001
CN001 (WHT)
TU VIDEO OUT(X)
TU VIDEO OUT(Y)
COMP SYNC
CN901 (RED)
TO AF-14 BOARD CN011
CN505 (WHT)
TO RF MODULATOR
TO PW-15BOARD
TO HP-18BOARD
TO MC-10BOARD
CN501
TO SS-50BOARD CN114
CN503 (RED)
CN502 (BLK)
TO SS-50BOARD CN111
CN902 (WHT)
FULL ERASE HEAD
AUDIO ERASE HEAD
AUDIO HEAD
CN504 (BLK)
TO AF-14 BOARD CN010
CN509 (BLK)
TO AF-14 BOARD CN007
CN507 (WHT)
CHECK
VIDEO HEAD B'
VIDEO HEAD A'
VIDEO HEAD B
VIDEO HEAD A
CN704 (WHT)
CN701 (BLK)
CN702 (WHT)
no mark : REC MODE
( ) : PB MODE
( ) : E-E MODE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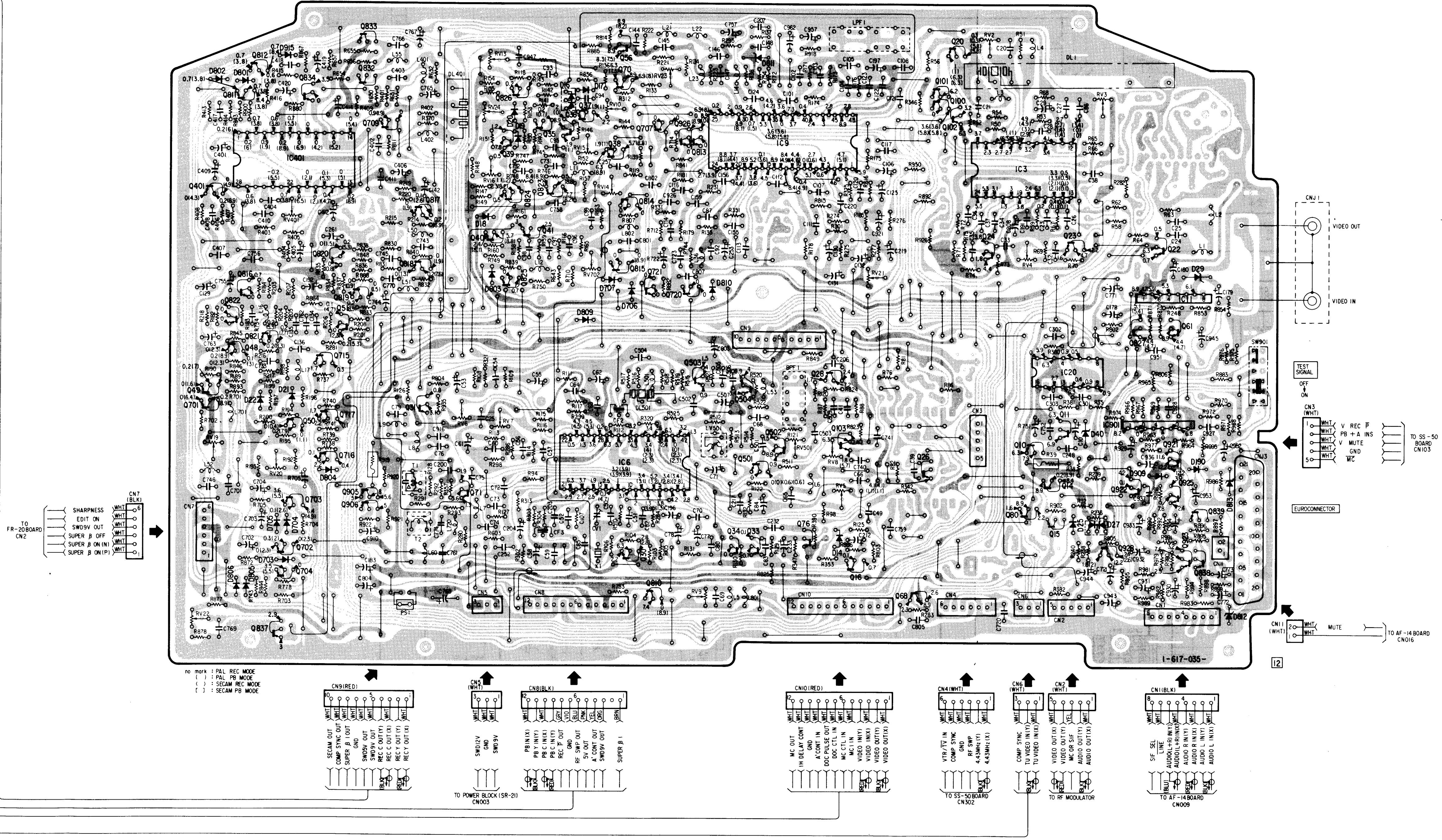
DH-4 BOARD
1-617-044-
no mark : REC MODE
( ) : PB MODE
TO RF MODULATOR
TO PW-15 BOARD
AUDIO L IN
AUDIO L OUT
GND
AUDIO R IN
AUDIO R OUT
SWD12V
POWER SW IN
CN505 (WHT)
TO HP-18 BOARD
HP R OUT
GND
HP L OUT
CN506 (RED)
TO MC-10 BOARD
MIC AMP IN (X)
MIC AMP IN (Y)
MIC OUT
CN510 (WHT)
CN501 (WHT)
VOW
VOB
GND
TO SS-50 BOARD CN114
CN503 (RED)
VIDEO IN(X)
VIDEO IN(Y)
VIDEO OUT(X)
VIDEO OUT(Y)
MC I OUT
MC CTL OUT
DOC CTL OUT
DOC PULSE IN
A' CONT OUT
GND
1H DELAY CONT
MC IN
CN502 (BLK)
DOC CONT 2 IN
DOC CONT 1 IN
JOG CONT 2 IN
JOG CONT 1 IN
DOC CONT 1'
POWER FAIL
TMR 5V
RF SWP IN
TO SS-50 BOARD CN111
CN902 (WHT)
F ERASE H(X)
F ERASE H(Y)
F ERASE H(G)
A ERASE H(X)
A ERASE H(Y)
AUDIO HEAD(X)
AUDIO HEAD(Y)
AUDIO HEAD(G)
FULL ERASE HEAD
AUDIO ERASE HEAD
AUDIO HEAD
TO AF-14 BOARD CN011
CN501 (RED)
REC Y IN(X)
REC Y IN(Y)
REC C IN(X)
REC C IN(Y)
SWD9V IN
SWD 5V IN
GND
SUPER β I IN
COMP SYNC IN
SECAM IN
CN508 (WHT)
REC OUT(X)
REC OUT(Y)
CUR DET(X)
CUR DET(Y)
VOLT DET(X)
VOLT DET(Y)
TO AF-14 BOARD CN010
AUDIO L IN(X)
AUDIO L IN(Y)
AUDIO R IN(X)
AUDIO R IN(Y)
POWER SW OUT
SWD 12V IN
CN504 (BLK)
TO AF-14 BOARD CN007
AUDIO IN(X)
AUDIO IN(Y)
MIC AMP OUT(X)
CN509 (BLK)
CN507 (WHT)
GND
REC CUR CHECK
CHECK
VIDEO HEAD B'
VIDEO HEAD A'
VIDEO HEAD B
VIDEO HEAD A
CN704 (WHT)
RP-31 BOARD
1-617-036-
no mark : REC MODE
( ) : PB MODE
CN701 (BLK)
SUPER βI
SWD9V IN
A' CONT IN
RF SWP IN
GND
REC TF IN
PB C OUT(Y)
PB C OUT(X)
PB Y OUT(Y)
PB Y OUT(X)
CN702 (WHT)
VOLT DET(Y)
VOLT DET(X)
CUR DET(Y)
CUR DET(X)
REC IN(Y)
REC IN(X)
YC-40 BOARD
no mark : PAL REC MODE
( ) : PAL PB MODE
< > : SECAM REC MODE
[ ] : SECAM PB MODE
TO FR-20 BOARD CN2
SHARPNESS
EDIT ON
SWD9V OUT
SUPER β OFF
SUPER β ON(N)
SUPER β ON(P)
CN7 (BLK)
CN9 (RED)
SECAM OUT
COMP SYNC OUT
SUPER β I OUT
GND
SWD9V OUT
REC C OUT(Y)
REC C OUT(X)
REC Y OUT(Y)
REC Y OUT(X)
CN3 (WHT)
SWD12V
GND
SWD9V
TO POWER BLOCK (SR-21) CN003
CN8 (BLK)
PB Y IN(X)
PB Y IN(Y)
PB C IN(X)
PB C IN(Y)
REC TF OUT
GND
RF SWP OUT
5V OUT
SWD9V OUT
SUPER β I
CN10 (RED)
MC OUT
1H DELAY CONT
GND
A' CONT IN
DOC PULSE IN
DOC CTL IN
MC I IN
VIDEO IN(Y)
VIDEO IN(X)
VIDEO OUT(Y)
VIDEO OUT(X)
Q
IC
D
ADJ
TP

	19	20	21	22	23	24	25	26	27	28
Q · IC	49 701	811 812 401 IC401 834 816 822 48 821 715 717 716 50 703 702 704 837	833 832 709 820 51 819 905 906 817 818 31	826 39 824 825 40 41 35 823 71	36 37 56 70 38 814 815 721 707 IC6 30 810	926 813 720 503 504 501 502 34 33 IC9	28 103 16	20 101 100 102 910 IC3 24 26 10 80 68	23 IC20 827 922 14 11 15 928	22 IC11 61 IC901 921 925 923 839 838
D		802 801 915 22 705,704 21 806,805 703 804		18 803 20 19 16	17 809 707 706	810 811	14		25 40 27	909 29 190 813 812
ADJ	RV22	RV19 RV401 RV20		RV24 RV13 RV16 RV6 RV7	RV15 RV702 RV10 RV14 CV1 RV23	LV501 RV9	RV501 RV8 RV5 RV21	RV2 RV4	RV3	

YC-40 BOARD


TO FR-20 BOARD CN2
SHARPNESS
EDIT ON
SWD9V OUT
SUPER β OFF
SUPER β ON (N)
SUPER β ON (P)
WHT
CN7 (BLK)
CN7
no mark : PAL REC MODE
( ) : PAL PB MODE
( ) : SECAM REC MODE
[ ] : SECAM PB MODE
CN9(RED)
SECAM OUT
COMP SYNC OUT
SUPER β I OUT
GND
SWD5V OUT
SWD9V OUT
REC C OUT (Y)
REC C OUT (X)
REC Y OUT (Y)
REC Y OUT (X)
(BLK)
(RED)
CN5 (WHT)
SWD12V
GND
SWD9V
TO POWER BLOCK (SR-21) CN003
CN8(BLK)
PB IN (X)
PB Y IN (Y)
PB C IN (X)
PB C IN (Y)
REC P̄ OUT
GND
RF SWP OUT
5V OUT
A' CONT OUT
SWD9V OUT
SUPER β I
GRY
VIO
BLU
PNK
YEL
ORG
BRN
CN10(RED)
MC OUT
1H DELAY CONT
GND
A'CONT IN
DOC PULSE OUT
DOC CTL IN
MC CTL IN
MC11 IN
VIDEO IN (Y)
VIDEO IN (X)
VIDEO OUT (Y)
VIDEO OUT (X)
CN4(WHT)
VTR/T̄V̄ IN
COMP SYNC
GND
RF SWP
4.43MHz (Y)
4.43MHz (X)
TO SS-50 BOARD CN302
CN6 (WHT)
COMP SYNC
TU VIDEO IN (Y)
TU VIDEO IN (X)
CN2 (WHT)
VIDEO OUT (X)
VIDEO OUT (Y)
MC OR SIF
AUDIO OUT (Y)
AUDIO OUT (X)
TO RF MODULATOR
CN1(BLK)
SIF SEL / LINE
AUDIO(L+R) IN(Y)
AUDIO(L+R) IN(X)
AUDIO R IN (Y)
AUDIO R IN (X)
AUDIO L IN (Y)
AUDIO L IN (X)
(BLU)
TO AF-14 BOARD CN009
1-617-035-
CNJ1
VIDEO OUT
VIDEO IN
SW901
TEST SIGNAL
OFF
ON
CN3 (WHT)
V REC P̄
PB + A INS
V MUTE
GND
M̄C̄
TO SS-50 BOARD CN103
CNJ3
EUROCONNECTOR
CN11 (WHT)
MUTE
TO AF-14 BOARD CN016
12

Note on Schematic Diagram:

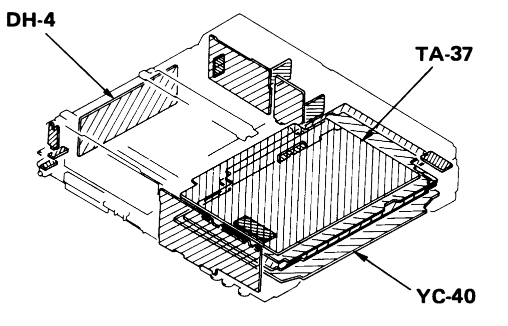
- All resistors are in ohms, 1/6 W unless otherwise noted. kΩ: 1000 Ω, MΩ: 1000 kΩ
- All capacitors are in μF unless otherwise noted. p: μμF 50WV or less are not indicated except for electrolytics.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : nonflammable resistor.
- : fusible resistor.
- The red lines show the main voltages.
- All voltages are dc measured with a VOM (10 MΩ).
- ━━ : B+ bus.
- ━ ━ : B– bus.

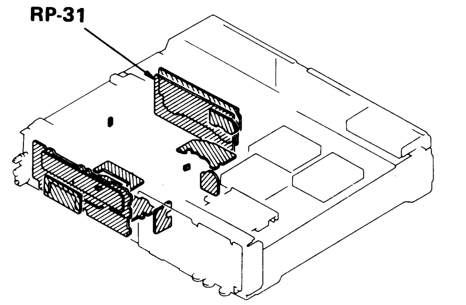
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note on Printed Wiring Board:

- ○— : Indicates a leadwire mounted on the component side.
- ●— : Indicates a leadwire mounted on the printed side.
- ░ : soldering side.
- ░ : B+ pattern
- Digital transistor (YC-40: Q15, 31, 35, 100, 101, 102, 702, 704, 707, 709, 720, 721, 810, 811, 812, 813, 814, 815, 826, 834, 910, 922, 926. RP-31: Q707. DH-4: Q311, 312. TA-36: Q003, 004, 006, 013, 014, 015, 301, 508, 601, 604, 605, 610, 703, 800, 802, 901) transistors with resistors.
  Refer to the YC-40, RP-31, DH-4, TA-36 boards schematic diagram for digital transistor.

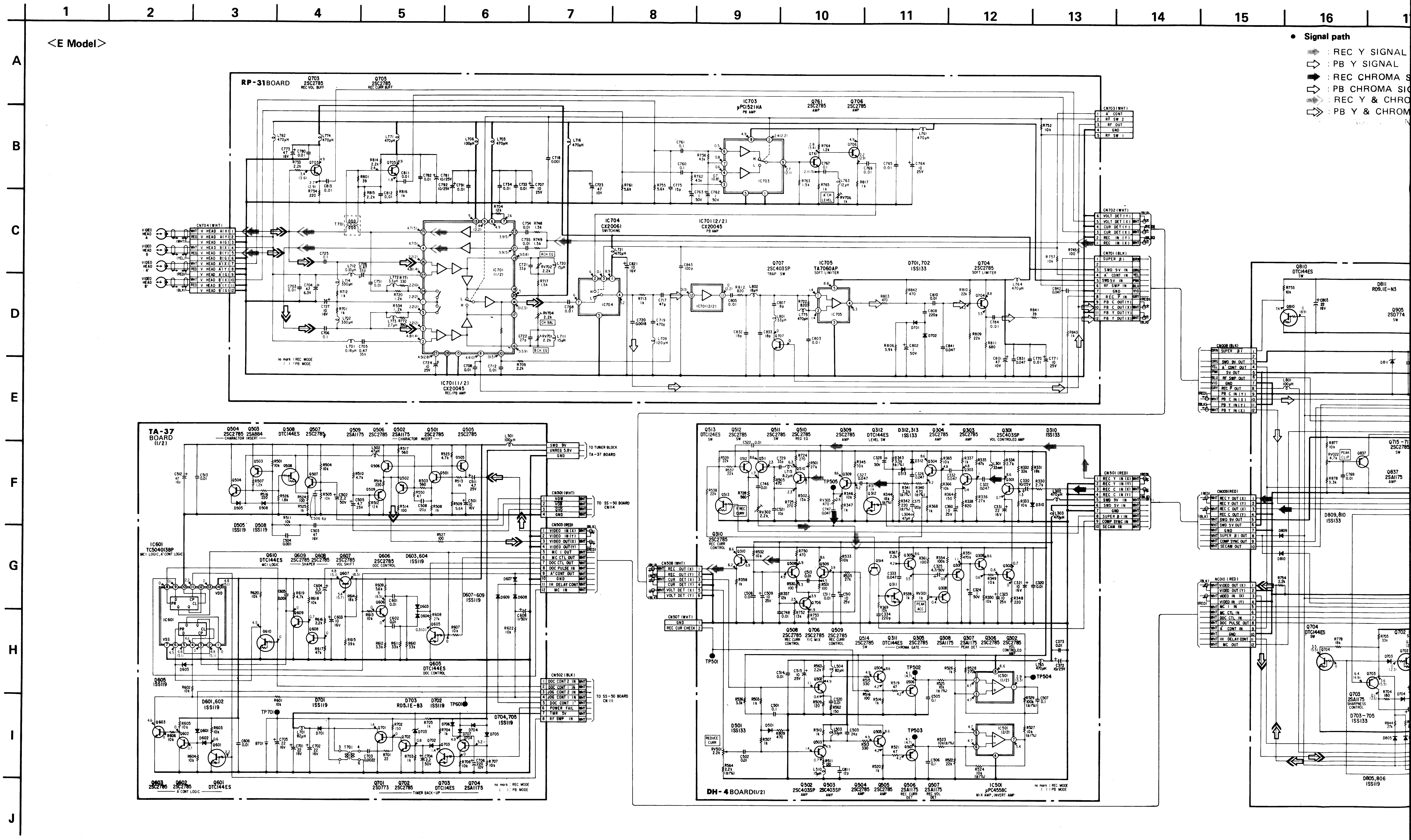
When indicating parts by reference number, please include the board name.


DH-4
TA-37
YC-40



E MODEL; YC-40 (Y/CHROMA SIGNAL PROCESS), RP-31 (VIDEO SIGNAL REC/PB AMP), TA-37 (TUNER, AUDIO), DH-4 (A/V HEAD AMP) SCHEMATIC DIAGRAMS

– Ref. No. YC-40 BOARD: 1,000 series, RP-31 BOARD: 6,000 series, TA-37 BOARD: 5,000 series, DH-4 BOARD: 7,000 series –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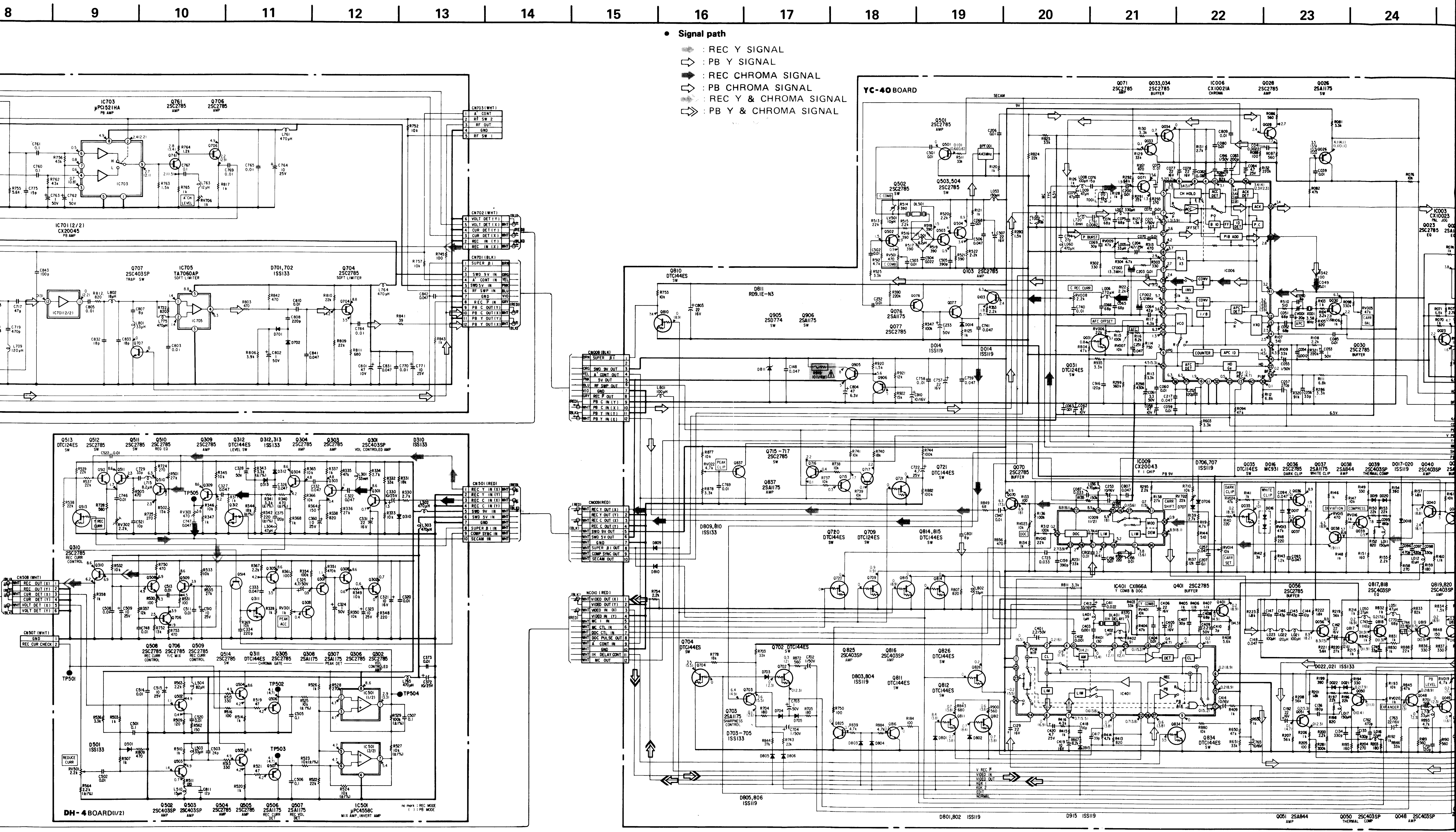
J
<E Model>
Signal path
: REC Y SIGNAL
: PB Y SIGNAL
: REC CHROMA S
: PB CHROMA SI
: REC Y & CHRO
: PB Y & CHROM
RP-31 BOARD
IC703 μPC1521HA PB AMP
IC704 CX20061 SWITCHING
IC701 (2/2) CX20045 PB AMP
IC701 (1/2) CX20045 REC/PB AMP
IC705 TA7060AP SOFT LIMITER
Q703 2SC2785 REC VOL BUFF
Q705 2SC2785 REC CURR BUFF
Q761 2SC2785 AMP
Q706 2SC2785 AMP
Q707 2SC403SP TRAP SW
Q704 2SC2785 SOFT LIMITER
D701,702 ISS133
CN704 (WHT)
CN703 (WHT)
CN702 (WHT)
CN701 (BLK)
VIDEO HEAD A
VIDEO HEAD B
VIDEO HEAD A'
VIDEO HEAD B'
no mark : REC MODE
( ) : PB MODE
TA-37 BOARD (1/2)
IC601 TC5040I3BP MCI LOGIC, A'CONT LOGIC
CN501 (WHT)
CN503 (RED)
CN502 (BLK)
TO TUNER BLOCK
TA-37 BOARD
TO SS-50 BOARD CN114
TO SS-50 BOARD CN111
TP701
TP601
DH-4 BOARD (1/2)
IC501 μPC4558C MIX AMP, INVERT AMP
CN508 (WHT)
CN507 (WHT)
CN501 (RED)
TP501
TP502
TP503
TP504
TP505
CN008 (BLK)
CN009 (RED)
NC010 (RED)
Q810 DTC144ES SW
D811 RD9.1E-N3
Q905 2SD774 SW
D809,810 ISS133
Q704 DTC144ES SW
Q703 2SA1175 SHARPNESS CONTROL
D703–705 ISS133
D805,806 ISS119
Q837 2SA1175 AMP

MC-Service



- Signal path

░ : REC Y SIGNAL

⇨ : PB Y SIGNAL

➡ : REC CHROMA SIGNAL

➡ : PB CHROMA SIGNAL

░ : REC Y & CHROMA SIGNAL

⇨ : PB Y & CHROMA SIGNAL

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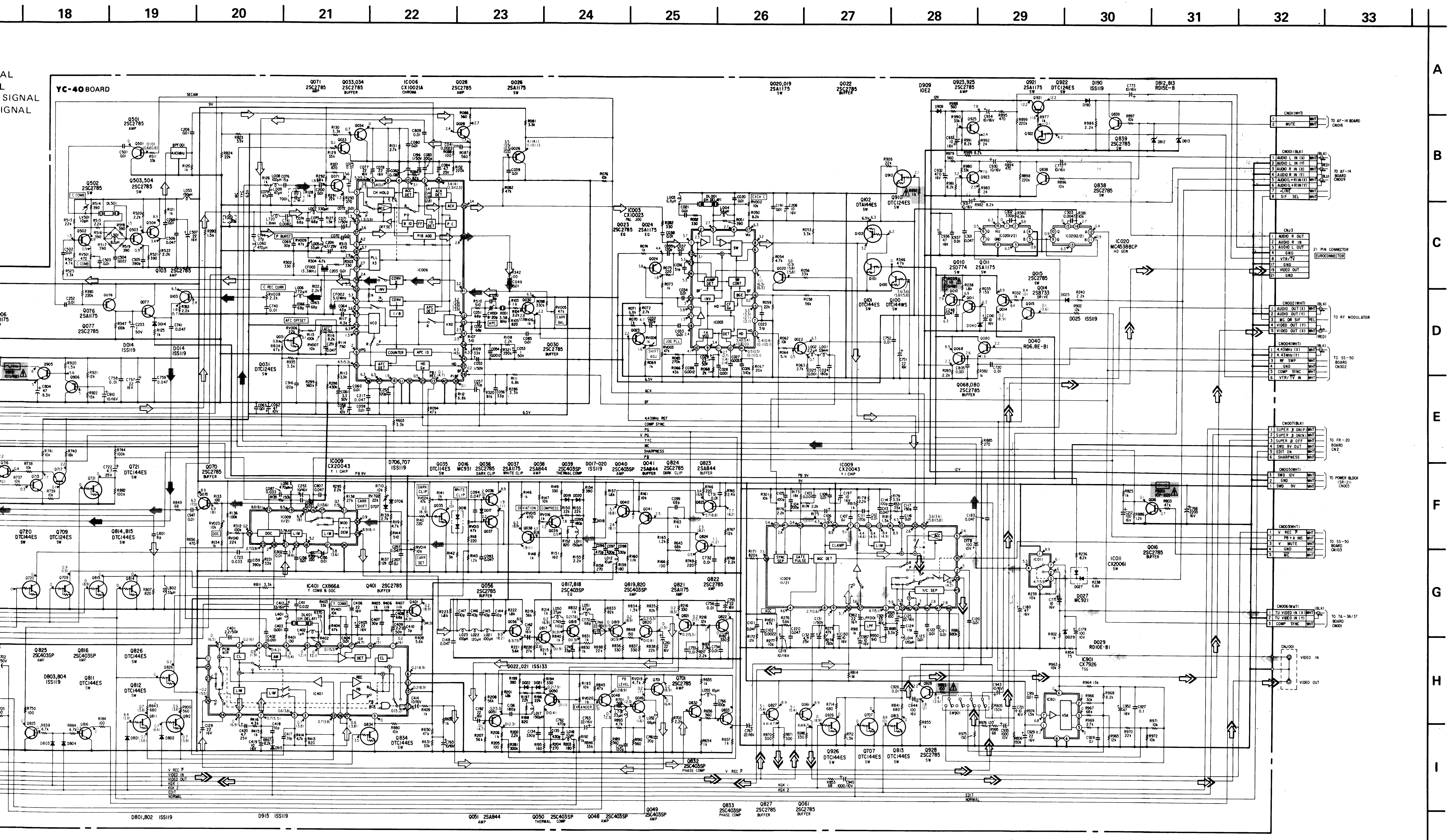
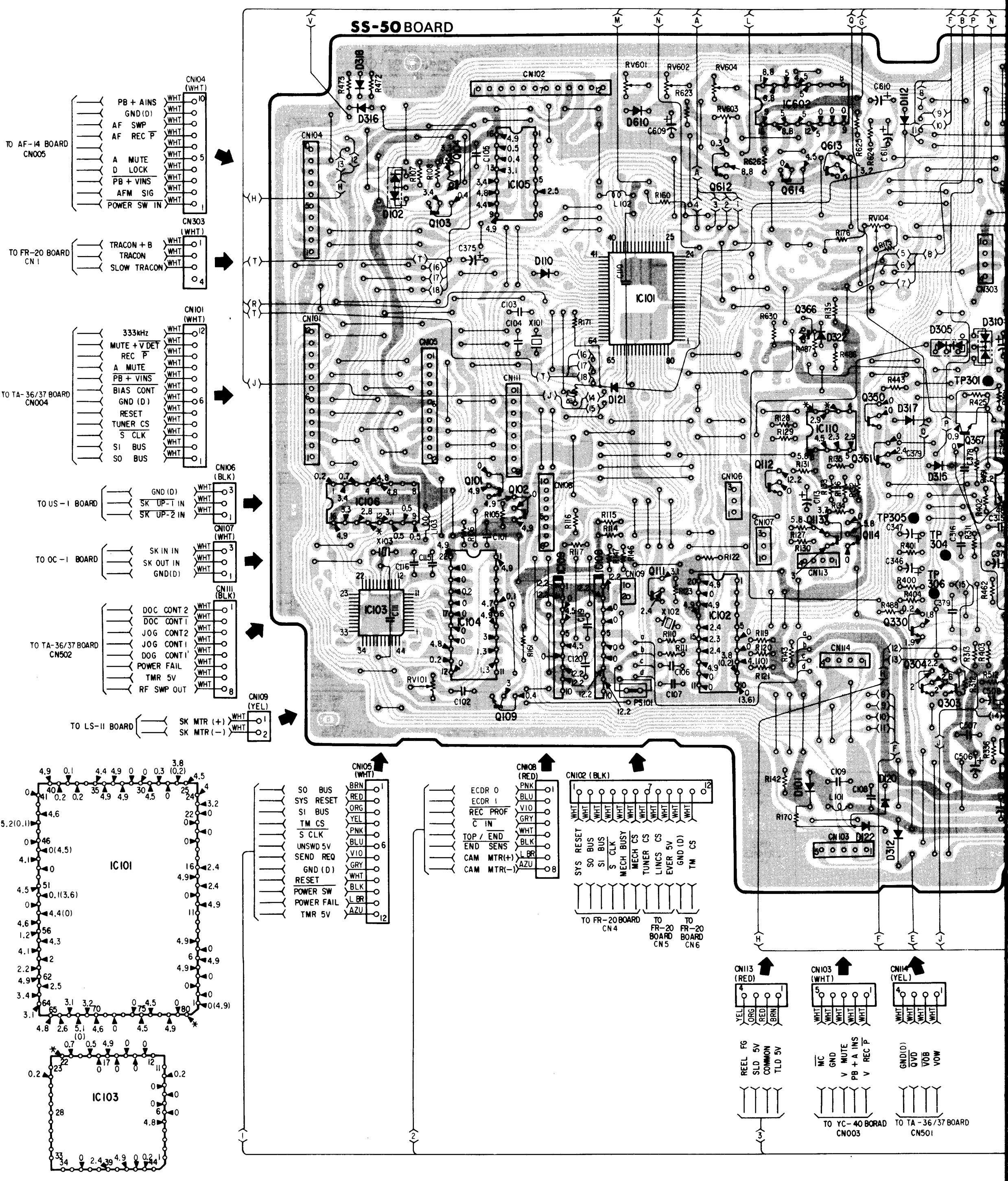
24
IC703 μPC1521HA PB AMP
Q761 2SC2785 AMP
Q706 2SC2785 AMP
IC701(2/2) CX20045 PB AMP
Q707 2SC403SP TRAP SW
IC705 TA7060AP SOFT LIMITER
D701,702 1SS133
Q704 2SC2785 SOFT LIMITER
CN703 (WHT)
CN702 (WHT)
CN701 (BLK)
CN501 (RED)
CN508 (WHT)
CN507 (WHT)
CN008 (BLK)
CN009 (RED)
NC010 (RED)
TP501
TP502
TP503
TP504
TP505
IC501 μPC4558C MIX AMP, INVERT AMP
DH-4 BOARD (1/2)
no mark : REC MODE
( ) : PB MODE
YC-40 BOARD
IC006 CX10021A CHROMA
IC009 CX20043 Y CHIP PB 9V
IC401 CX866A Y COMB & DOC
IC003 CX10023
D811 RD9.1E-N3
Q905 2SD774 SW
Q906 2SA1175 SW


YC-40 BOARD
IC006 CX10021A CHROMA
IC003 CX10023 PAL JOG
IC009 CX20043 Y I CHIP
IC401 CX866A Y COMB & DOC
IC020 MC4538BCP HD GEN
IC011 CX20061 BUFFER
IC901 CX7926 TSG
TO AF-14 BOARD CN016
TO AF-14 BOARD CN009
21 PIN CONNECTOR
EUROCONNECTOR
TO RF MODULATOR
TO SS-50 BOARD CN302
TO FR-20 BOARD CN2
TO POWER BLOCK (SR-21) CN003
TO SS-50 BOARD CN103
TO TA-36/37 BOARD CN001
VIDEO IN
VIDEO OUT

1-4. SS-50 (SERVO, SYSTEM CONTROL), DR-33 (SYSTEM CONTROL, SIGNAL TRANSLATION), RD-17 (R

– Ref. No. SS-50 BOARD: 2,000 series, DR-33 BOARD: 9,300 series, RD-17 BOARD: 9,400 series, LM-17 BOARD: 9,400 serie

	3	4	5	6	7
Q · IC	103 IC106 IC103	104 IC105 101 102 IC104 IC109 IC108 109	IC101 612 111 IC102	IC602 614 613 366 IC110 350 361 113 114 112	367 330 304,303
D	318 316 102	110	610 121	322 101 122 120 312	112 317 305 310 315
ADJ	RV101		RV601 RV602 RV604 RV603	RV104	
TP					305 306 304 301


A
B
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D
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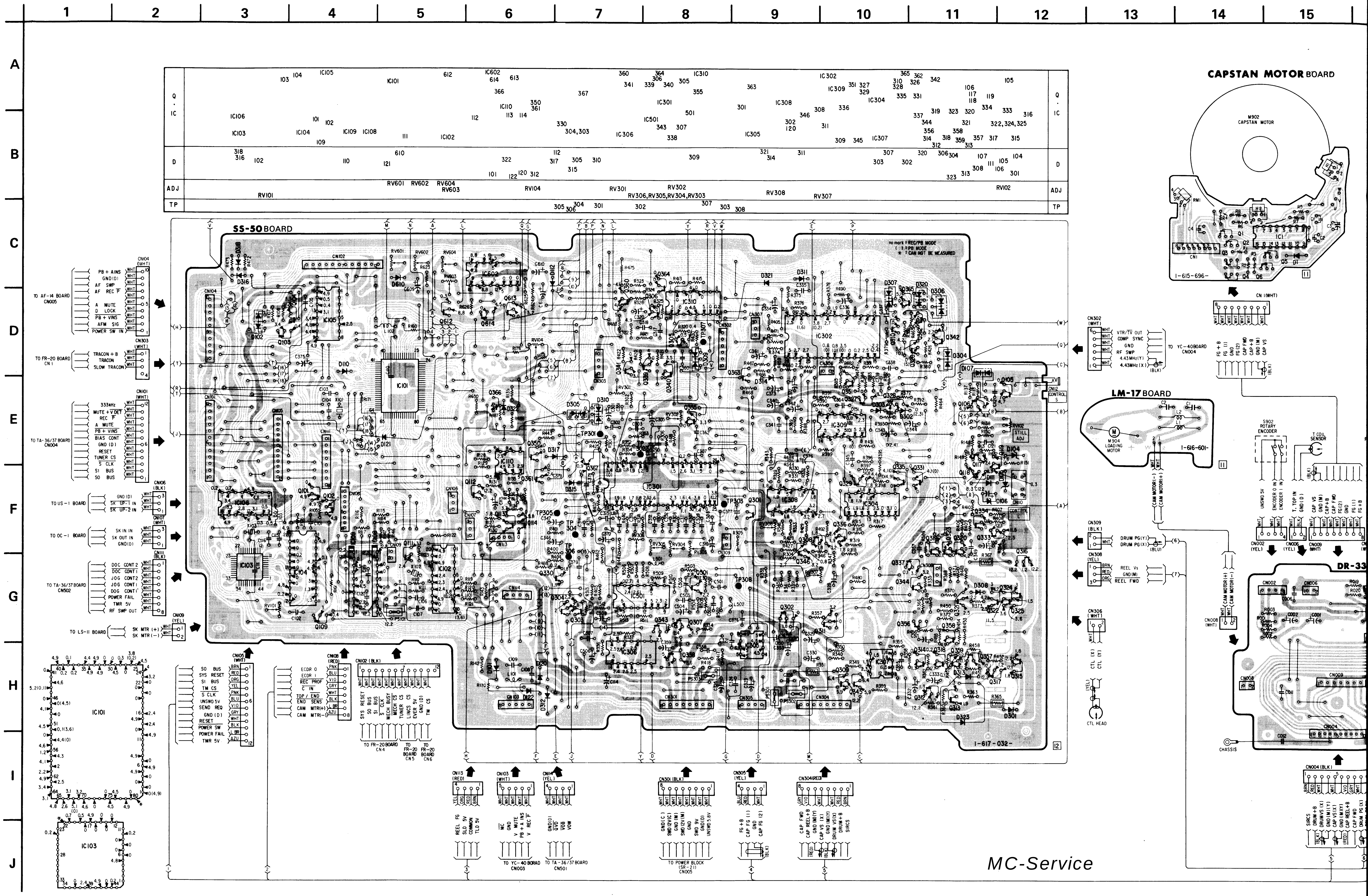
G
H
I
J
SS-50 BOARD
TO AF-14 BOARD CN005
CN104 (WHT)
PB + AINS
GND (D)
AF SWP
AF REC P
A MUTE
D LOCK
PB + VINS
AFM SIG
POWER SW IN
TO FR-20 BOARD CN1
CN303 (WHT)
TRACON + B
TRACON
SLOW TRACON
TO TA-36/37 BOARD CN004
CN101 (WHT)
333kHz
MUTE + V DET
REC P
A MUTE
PB + VINS
BIAS CONT
GND (D)
RESET
TUNER CS
S CLK
SI BUS
SO BUS
TO US-1 BOARD
CN106 (BLK)
GND (D)
SK UP-1 IN
SK UP-2 IN
TO OC-1 BOARD
CN107 (WHT)
SK IN IN
SK OUT IN
GND(D)
TO TA-36/37 BOARD CN502
CN111 (BLK)
DOC CONT 2
DOC CONT 1
JOG CONT2
JOG CONT 1
DOG CONT 1'
POWER FAIL
TMR 5V
RF SWP OUT
TO LS-11 BOARD
CN109 (YEL)
SK MTR (+)
SK MTR (−)
IC101
IC103
CN105 (WHT)
SO BUS
SYS RESET
SI BUS
TM CS
S CLK
UNSWD 5V
SEND REQ
GND (D)
RESET
POWER SW
POWER FAIL
TMR 5V
CN108 (RED)
ECDR 0
ECDR 1
REC PROF
C IN
TOP / END
END SENS
CAM MTR(+)
CAM MTR(−)
CN102 (BLK)
SYS RESET
SO BUS
SI BUS
S CLK
MECH BUSY
MECH CS
TUNER CS
LINCS CS
EVER 5V
GND (D)
TM CS
TO FR-20 BOARD CN4
TO FR-20 BOARD CN5
TO FR-20 BOARD CN6
CN113 (RED)
REEL FG
SLD 5V
COMMON
TLD 5V
CN103 (WHT)
MC
GND
V MUTE
PB + A INS
V REC P
TO YC-40 BORAD CN003
CN114 (YEL)
GND(D)
QVD
VOB
VOW
TO TA-36/37 BOARD CN501
IC105
IC106
IC104
IC102
IC602
IC110
Q101
Q102
Q103
Q109
Q111
Q112
Q113
Q114
Q304
Q305
Q330
Q350
Q361
Q366
Q367
Q612
Q613
Q614
D102
D110
D121
D305
D310
D312
D315
D316
D317
D318
D322
D610
RV101
RV104
RV601
RV602
RV603
RV604
TP301
TP304
TP305
TP306
X103
PS101

1-4. SS-50 (SERVO, SYSTEM CONTROL), DR-33 (SYSTEM CONTROL, SIGNAL TRANSLATION), RD-17 (ROTATION DETECTOR), LM-17 (LOADING MOTOR), R STATOR (REEL MOTOR), CAPSTAN MOTOR PRINTED WIRING BOARDS

– Ref. No. SS-50 BOARD: 2,000 series, DR-33 BOARD: 9,300 series, RD-17 BOARD: 9,400 series, LM-17 BOARD: 9,400 series, R STATOR BOARD: 9,100 series, CAPSTAN MOTOR BOARD: 9,200 series –



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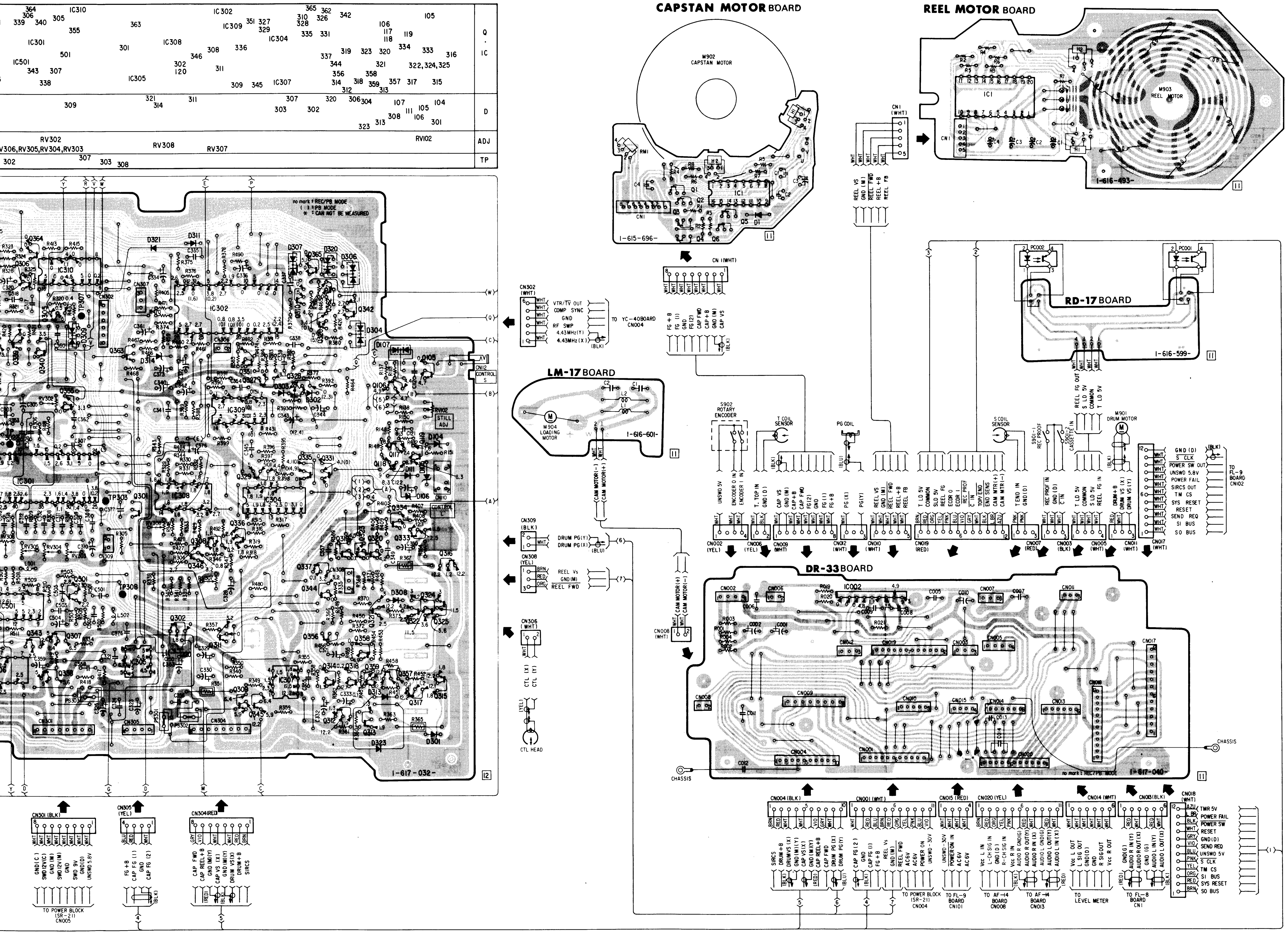
Q · IC
D
ADJ
TP
SS-50 BOARD
CAPSTAN MOTOR BOARD
M902 CAPSTAN MOTOR
1-615-696-
LM-17 BOARD
M904 LOADING MOTOR
1-616-601-
DR-33
1-617-032-
IC101
IC103
TO AF-14 BOARD CN005
TO FR-20 BOARD CN1
TO TA-36/37 BOARD CN004
TO US-1 BOARD
TO OC-1 BOARD
TO TA-36/37 BOARD CN502
TO LS-11 BOARD
TO FR-20 BOARD CN4
TO FR-20 BOARD CN5
TO FR-20 BOARD CN6
TO YC-40 BOARD CN003
TO TA-36/37 BOARD CN501
TO POWER BLOCK (SR-21) CN005
TO YC-40 BOARD CN004
S902 ROTARY ENCODER
T COIL SENSOR
CTL HEAD
CHASSIS
no mark : REC/PB MODE
( ) : PB MODE
★ : CAN NOT BE MEASURED

ATION DETECTOR), LM-17 (LOADING MOTOR), R STATOR (REEL MOTOR), CAPSTAN MOTOR PRINTED WIRING BOARDS

STATOR BOARD: 9,100 series, CAPSTAN MOTOR BOARD: 9,200 series –


CAPSTAN MOTOR BOARD
M902 CAPSTAN MOTOR
1-615-696-
REEL MOTOR BOARD
M903 REEL MOTOR
1-616-493-
RD-17 BOARD
PC002
PC001
1-616-599-
LM-17 BOARD
M904 LOADING MOTOR
1-616-601-
DR-33 BOARD
1-617-040-
1-617-032-
IC302
IC309
IC301
IC304
IC305
IC307
IC308
IC310
CN302
CN301 (BLK)
CN305 (YEL)
CN304 (RED)
CN309 (BLK)
CN308 (YEL)
CN306 (WHT)
S902 ROTARY ENCODER
T COIL SENSOR
PG COIL
S COIL SENSOR
M901 DRUM MOTOR
CTL HEAD
CHASSIS
TO YC-40 BOARD CN004
TO POWER BLOCK (SR-21) CN005
TO POWER BLOCK (SR-21) CN004
TO FL-9 BOARD CN101
TO AF-14 BOARD CN006
TO AF-14 BOARD CN013
TO LEVEL METER
TO FL-8 BOARD CN1
TO FL-9 BOARD CN102
RV302
RV306, RV305, RV304, RV303
RV308
RV307
RV102
Q
IC
D
ADJ
TP
STILL ADJ
no mark : REC/PB MODE
( ) : PB MODE
* : CAN NOT BE MEASURED

Note on Schematic Diagram:

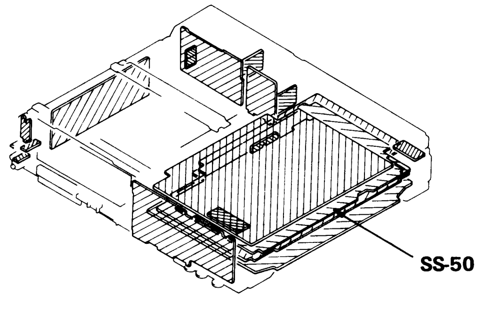
- All resistors are in ohms, $^1/_6$W unless otherwise noted. kΩ: 1000 Ω, MΩ: 1000 kΩ
- All capacitors are in μF unless otherwise noted. p: μμF 50WV or less are not indicated except for electrolytics.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ⊣▭⊢ : nonflammable resistor.
- ⊣∿⊢ : fusible resistor.
- The red lines show the main voltages.
- All voltages are dc measured with a VOM (10 MΩ).
- ▬▬ : B+ bus.
- ▬ ▬ ▬ : B– bus.

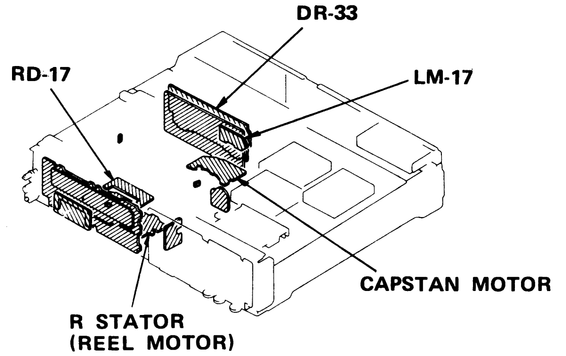
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note on Printed Wiring Board:

- ○—— : Indicates a leadwire mounted on the component side.
- ●—— : Indicates a leadwire mounted on the printed side.
- ░ : soldering side.
- ░ : B+ pattern
- ░ : component side.
- Digital transistor (SS-50: Q101, 102, 103, 104, 105, 109, 111, 112, 301, 302, 303, 304, 310, 311, 314, 317, 318, 319, 323, 326, 327, 331, 335, 337, 339, 340, 341, 343, 344, 350, 351, 352, 353, 354, 355, 360, 361, 362, 364, 365, 612, 613, 614) transistors with resistors.
  Refer to the SS-50 baord schematic diagram for digital transistor.

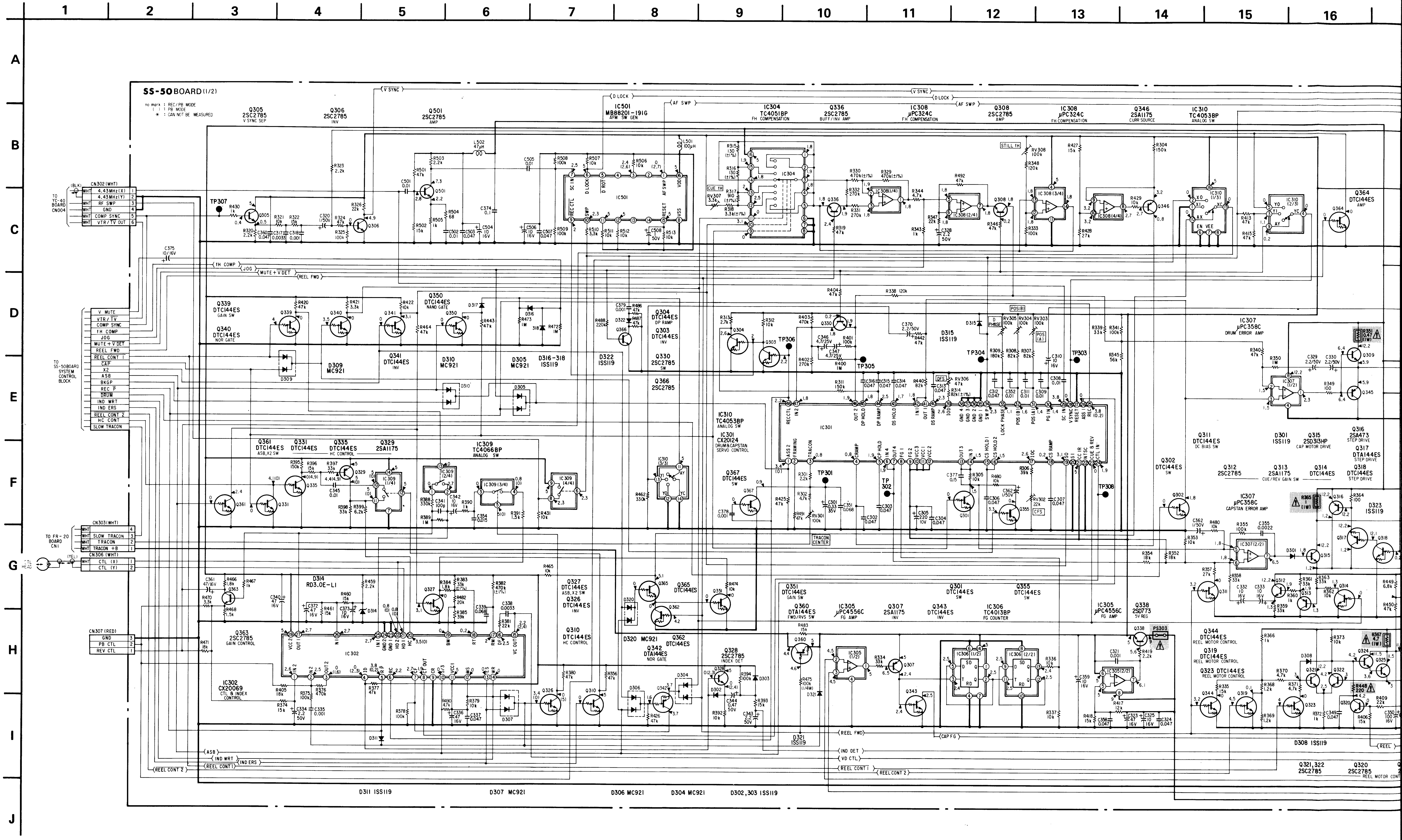
When indicating parts by reference number, please include the board name.

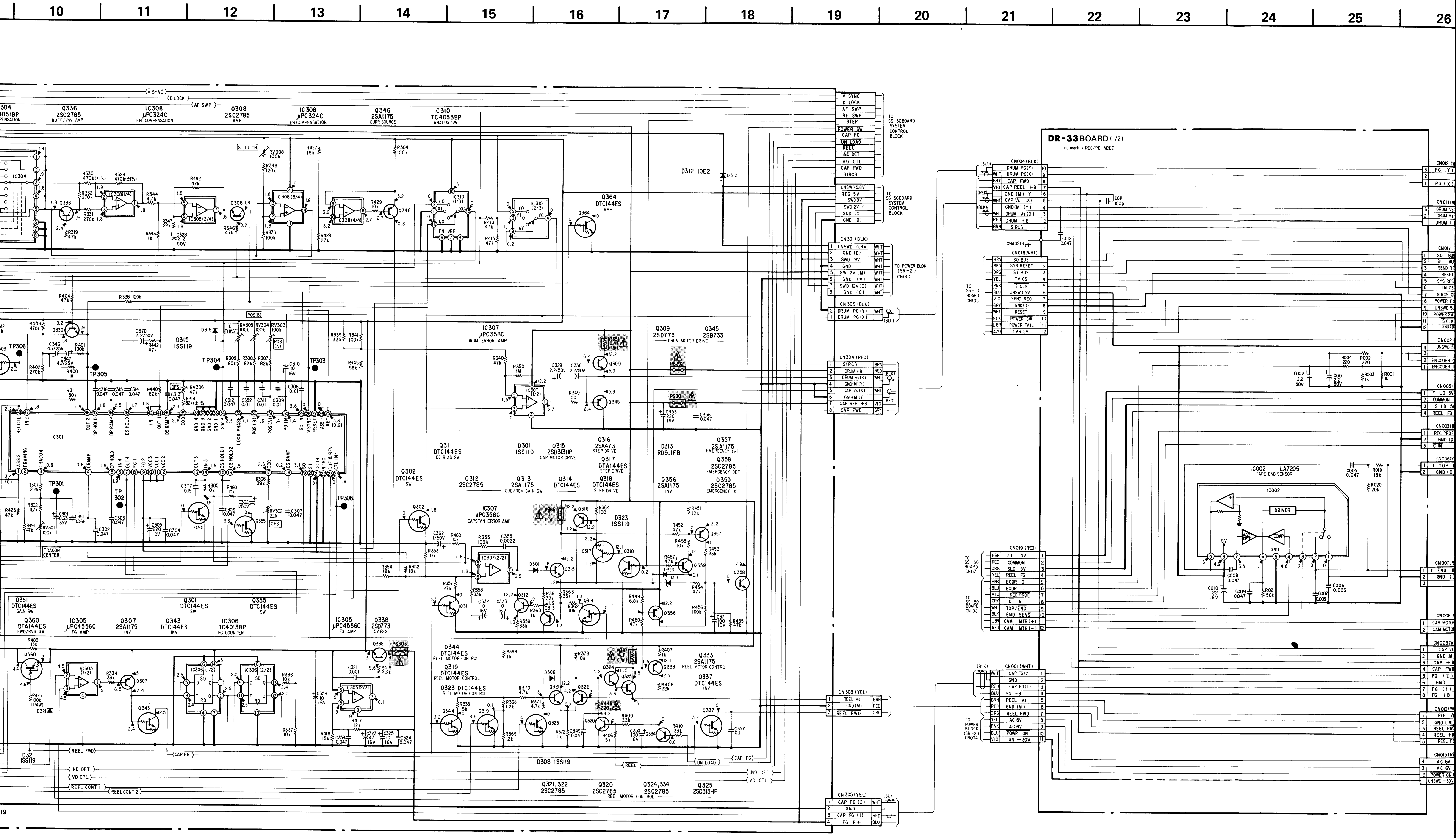



DR-33
RD-17
LM-17
CAPSTAN MOTOR
R STATOR (REEL MOTOR)

SS-50 (SERVO, SYSTEM CONTROL), DR-33 (SYSTEM CONTROL, SIGNAL TRANSLATION), RD-17 (ROTATION DETECTOR), LM-17 (LOADING MOTOR), R STATOR (REEL MOTOR), CAPSTAN MOTOR SCHEMATIC DIAGRAMS

– Ref. No. SS-50 BOARD: 2,000 series, DR-33 BOARD: 9,300 series, RD-17 BOARD: 9,400 series, LM-17 BOARD: 9,400 series, R STATOR BOARD: 9,100 series, CAPSTAN MOTOR BOARD: 9,200 series –


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I J
SS-50 BOARD (1/2)
no mark : REC/PB MODE
( ) : PB MODE
* : CAN NOT BE MEASURED
TO YC-40 BOARD CN004
CN302 (WHT)
4.43MHz(X)
4.43MHz(Y)
RF SWP
GND
COMP SYNC
VTR/TV OUT
(BLK)
TP307
Q305 2SC2785 V SYNC SEP
Q306 2SC2785 INV
Q501 2SC2785 AMP
IC501 MB88201-191G AFM SW GEN
IC304 TC4051BP FH COMPENSATION
Q336 2SC2785 BUFF/INV AMP
IC308 μPC324C FH COMPENSATION
Q308 2SC2785 AMP
IC308 μPC324C FH COMPENSATION
Q346 2SA1175 CURR SOURCE
IC310 TC4053BP ANALOG SW
Q364 DTC144ES AMP
V SYNC
D LOCK
AF SWP
STILL FH
CUE FH
FH COMP
JOG
MUTE + V DET
REEL FWD
TO SS-50 BOARD SYSTEM CONTROL BLOCK
V MUTE
VTR/TV
COMP SYNC
FH COMP
JOG
MUTE + V DET
REEL FWD
REEL CONT 1
CAP
X2
ASB
BKGP
REC P
DRUM
IND WRT
IND ERS
REEL CONT 2
HC CONT
SLOW TRACON
Q339 DTC144ES GAIN SW
Q340 DTC144ES NOR GATE
Q341 DTC144ES INV
Q350 DTC144ES NAND GATE
D309 MC921
D310 MC921
D305 MC921
D316-318 1SS119
D322 1SS119
Q304 DTC144ES DP RAMP
Q303 DTC144ES INV
Q330 2SC2785 SW
Q366 2SC2785
TP306
TP305
TP304
TP303
D315 1SS119
POS(B)
POS(A)
DFS
IC307 μPC358C DRUM ERROR AMP
Q309
Q345
Q361 DTC144ES ASB, X2 SW
Q331 DTC144ES
Q335 DTC144ES HC CONTROL
Q329 2SA1175
IC309 TC4066BP ANALOG SW
IC310 TC4053BP ANALOG SW
IC301 CX20124 DRUM & CAPSTAN SERVO CONTROL
Q367 DTC144ES SW
TP301
TP302
TP308
TRACON CENTER
CFS
Q311 DTC144ES DC BIAS SW
D301 1SS119
Q315 2SD1313HP CAP MOTOR DRIVE
Q316 2SA473 STEP DRIVE
Q317 DTA144ES STEP DRIVE
Q318 DTC144ES STEP DRIVE
Q302 DTC144ES SW
Q312 2SC2785
Q313 2SA1175 CUE/REV GAIN SW
Q314 DTC144ES
IC307 μPC358C CAPSTAN ERROR AMP
TO FR-20 BOARD CN1
CN303 (WHT)
SLOW TRACON
TRACON
TRACON +B
CN306 (WHT)
CTL (X)
CTL (Y)
CTL HEAD
(YEL)
D314 RD3.0E-L1
Q327 DTC144ES ASB, X2 SW
Q326 DTC144ES INV
Q310 DTC144ES HC CONTROL
Q365 DTC144ES
Q362 DTC144ES
D320 MC921
Q342 DTA144ES NOR GATE
Q351 DTC144ES GAIN SW
Q360 DTA144ES FWD/RVS SW
IC305 μPC4556C FG AMP
Q307 2SA1175 INV
Q343 DTC144ES INV
Q301 DTC144ES SW
IC306 TC4013BP FG COUNTER
Q355 DTC144ES SW
IC305 μPC4556C FG AMP
Q338 2SD773 5V REG
PS303
Q344 DTC144ES REEL MOTOR CONTROL
Q319 DTC144ES REEL MOTOR CONTROL
Q323 DTC144ES REEL MOTOR CONTROL
CN307 (RED)
GND
PB CTL
REV CTL
Q363 2SC2785 GAIN CONTROL
IC302 CX20069 CTL & INDEX CONTROL
Q328 2SC2785 INDEX DET
D306
D304
D302
D303
D307
D311
D321 1SS119
D308 1SS119
REEL FWD
CAP FG
IND DET
VD CTL
REEL CONT 1
REEL CONT 2
ASB
IND WRT
IND ERS
REEL
Q321, 322 2SC2785
Q320 2SC2785 REEL MOTOR CONT
D311 1SS119
D307 MC921
D306 MC921
D304 MC921
D302, 303 1SS119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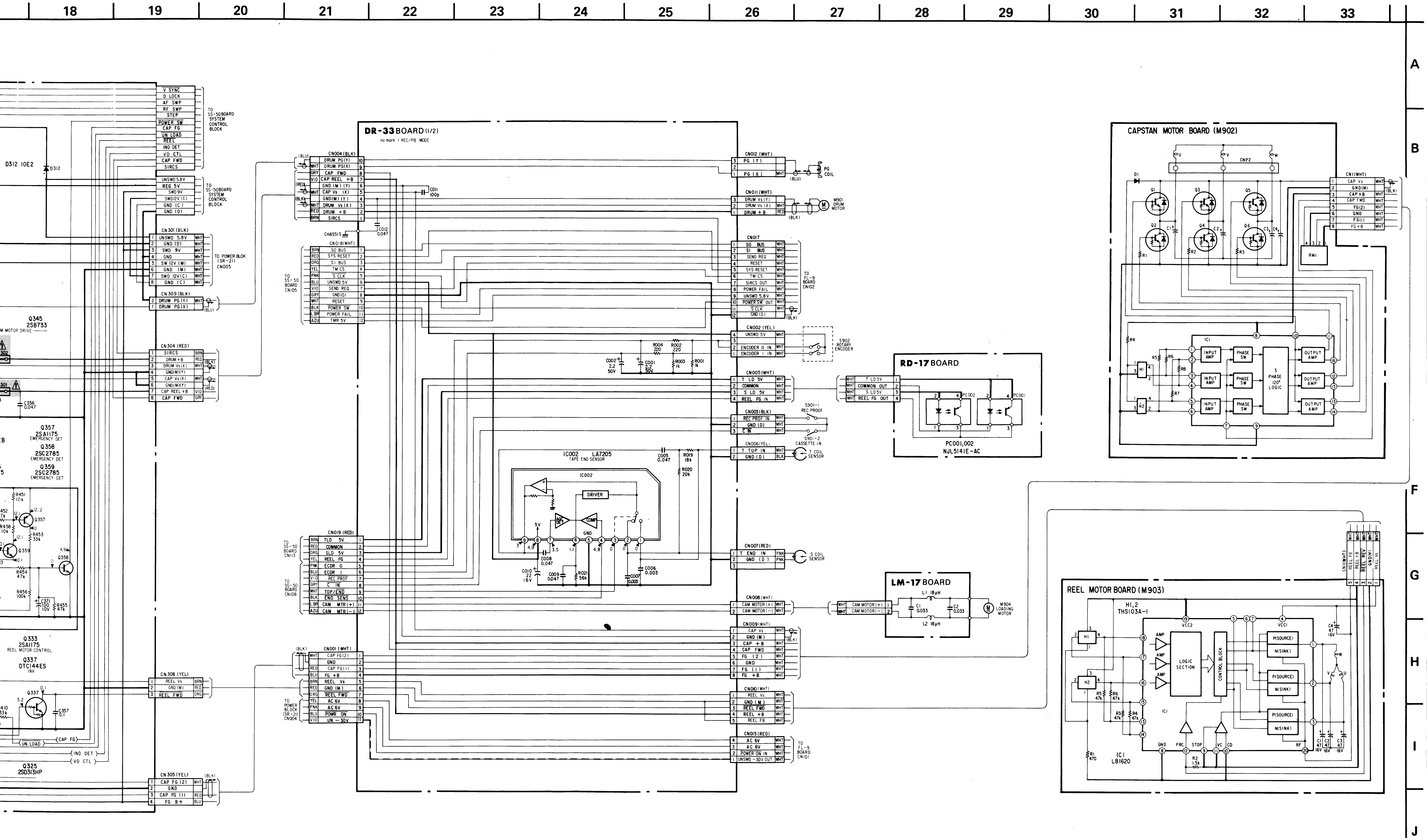
21
22
23
24
25
26
V SYNC
D LOCK
AF SWP
Q336 2SC2785 BUFF/INV AMP
IC308 μPC324C FH COMPENSATION
Q308 2SC2785 AMP
IC308 μPC324C FH COMPENSATION
Q346 2SA1175 CURR SOURCE
IC310 TC4053BP ANALOG SW
Q364 DTC144ES AMP
D312 10E2
TO SS-50 BOARD SYSTEM CONTROL BLOCK
CN301 (BLK)
TO POWER BLOK (SR-21) CN005
CN309 (BLK)
CN304 (RED)
IC301
IC307 μPC358C DRUM ERROR AMP
Q309 2SD773
Q345 2SB733
DRUM MOTOR DRIVE
PS301
PS302
D315 1SS119
TP301
TP302
TP303
TP304
TP305
TP306
TP308
Q311 DTC144ES DC BIAS SW
D301 1SS119
Q315 2SD313HP CAP MOTOR DRIVE
Q316 2SA473 STEP DRIVE
Q317 DTA144ES STEP DRIVE
Q318 DTC144ES STEP DRIVE
D313 RD9.1EB
Q357 2SA1175 EMERGENCY DET
Q358 2SC2785 EMERGENCY DET
Q359 2SC2785 EMERGENCY DET
Q356 2SA1175 INV
Q302 DTC144ES SW
Q312 2SC2785
Q313 2SA1175
Q314 DTC144ES
CUE/REV GAIN SW
IC307 μPC358C CAPSTAN ERROR AMP
D323 1SS119
Q351 DTC144ES GAIN SW
Q360 DTA144ES FWD/RVS SW
IC305 μPC4556C FG AMP
Q307 2SA1175 INV
Q343 DTC144ES INV
Q301 DTC144ES SW
IC306 TC4013BP FG COUNTER
Q355 DTC144ES SW
IC305 μPC4556C FG AMP
Q338 2SD773 5V REG
PS303
Q344 DTC144ES REEL MOTOR CONTROL
Q319 DTC144ES REEL MOTOR CONTROL
Q323 DTC144ES REEL MOTOR CONTROL
Q333 2SA1175 REEL MOTOR CONTROL
Q337 DTC144ES INV
D308 1SS119
D321 1SS119
CN308 (YEL)
CN305 (YEL)
Q321,322 2SC2785
Q320 2SC2785
Q324,334 2SC2785
Q325 2SD313HP
REEL MOTOR CONTROL
REEL FWD
CAP FG
IND DET
VD CTL
REEL CONT 1
REEL CONT 2
REEL
UN LOAD
DR-33 BOARD (1/2)
no mark : REC/PB MODE
CN004 (BLK)
CN002 (WHT)
CN011
CN017
CN018 (WHT)
TO SS-50 BOARD CN105
CN002
CN005
CN003
CN006
IC002 LA7205 TAPE END SENSOR
DRIVER
COMP
CN019 (RED)
TO SS-50 BOARD CN113
TO SS-50 BOARD CN108
CN007
CN008
CN009
CN001 (WHT)
TO POWER BLOCK (SR-21) CN004
CN010
CN015
CHASSIS

MC-Service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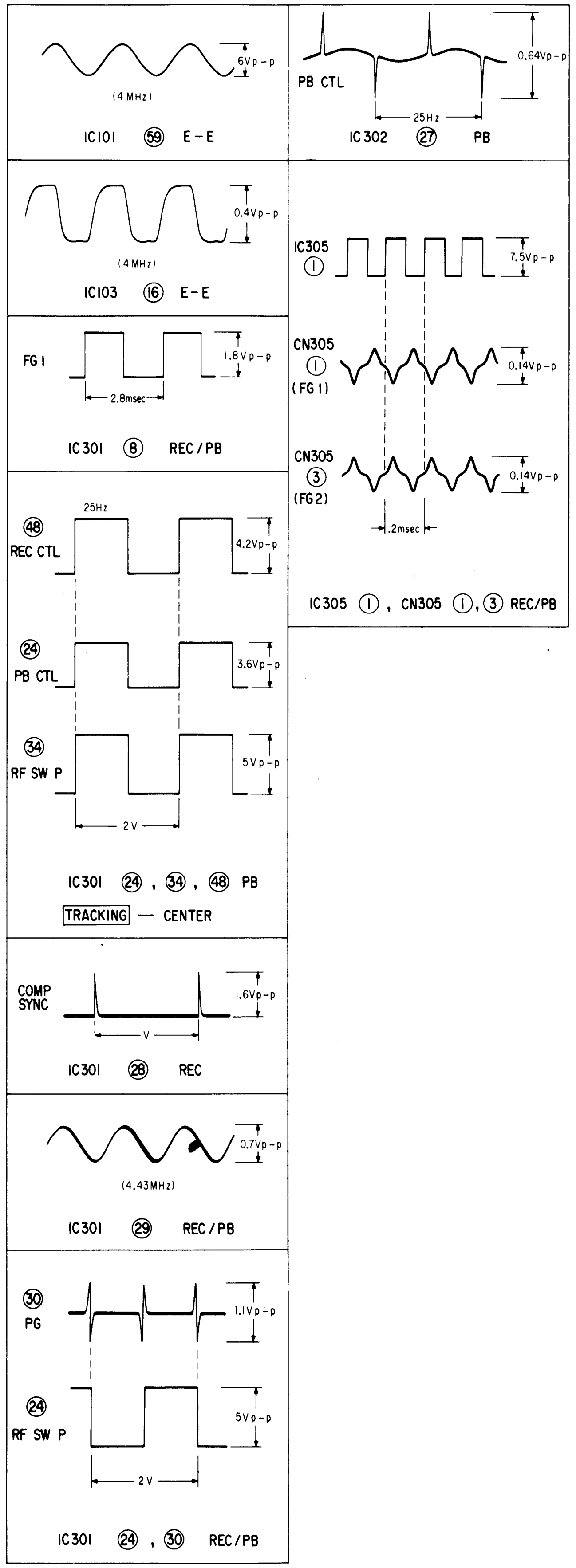
29
30
31
32
33
A
B
F
G
H
I
J
V SYNC
D LOCK
AF SWP
RF SWP
STEP
POWER SW
CAP FG
UN LOAD
REEL
IND DET
VD CTL
CAP FWD
SIRCS
TO SS-50BOARD SYSTEM CONTROL BLOCK
UNSWD 5.8V
REG 5V
SWD9V
SWD12V (C)
GND (C)
GND (D)
D312 10E2
D312
CN301 (BLK)
TO POWER BLOK (SR-21) CN005
CN309 (BLK)
DRUM PG (Y)
DRUM PG (X)
Q345 2SB733
CN304 (RED)
Q357 2SA1175 EMERGENCY DET
Q358 2SC2785 EMERGENCY DET
Q359 2SC2785 EMERGENCY DET
Q333 2SA1175 REEL MOTOR CONTROL
Q337 DTC144ES INV
Q325 2SD313HP
CN308 (YEL)
REEL Vs
GND (M)
REEL FWD
CN305 (YEL)
CAP FG (2)
GND
CAP FG (1)
FG B+
UN LOAD
CAP FG
IND DET
VD CTL
DR-33 BOARD (1/2)
no mark : REC/PB MODE
CN004 (BLK)
DRUM PG (Y)
DRUM PG (X)
CAP FWD
CAP REEL +B
GND (M) (Y)
CAP Vs (X)
GND (M) (Y)
DRUM Vs (X)
DRUM +B
SIRCS
C011 100p
C012 0.047
CHASSIS
CN018 (WHT)
SO BUS
SYS RESET
SI BUS
TM CS
S CLK
UNSWD 5V
SEND REQ
GND (D)
RESET
POWER SW
POWER FAIL
TMR 5V
TO SS-50 BOARD CN105
CN012 (WHT)
PG (Y)
PG (X)
PG COIL
CN011 (WHT)
DRUM Vs (Y)
DRUM Vs (X)
DRUM + B
M901 DRUM MOTOR
CN017
SO BUS
SI BUS
SEND REQ
RESET
SYS RESET
TM CS
SIRCS OUT
POWER FAIL
UNSWD 5.8V
POWER SW OUT
S CLK
GND (D)
TO FL-9 BOARD CN102
CN002 (YEL)
UNSWD 5V
ENCODER 0 IN
ENCODER 1 IN
S902 ROTARY ENCODER
R004 220
R002 220
R003 1k
R001 1k
C002 2.2 50V
C001 2.2 50V
CN005 (WHT)
T LD 5V
COMMON
S LD 5V
REEL FG IN
CN003 (BLK)
REC PROOF IN
GND (D)
C IN
S901-1 REC PROOF
S901-2 CASSETTE IN
CN006 (YEL)
T TOP IN
GND (D)
T COIL SENSOR
IC002 LA7205 TAPE END SENSOR
IC002
DRIVER
COMP
GND
5V
C005 0.047
R019 18k
R020 20k
C008 0.047
C010 22 16V
C009 0.047
R021 56k
C006 0.003
C007 0.033
CN019 (RED)
TLD 5V
COMMON
SLD 5V
REEL FG
ECDR 0
ECDR 1
REC PROF
C IN
TOP/END
END SENS
CAM MTR (+)
CAM MTR (−)
TO SS-50 BOARD CN113
TO SS-50 BOARD CN108
CN007 (RED)
T END IN
GND (D)
S COIL SENSOR
CN008 (WHT)
CAM MOTOR (+)
CAM MOTOR (−)
CN009 (WHT)
CAP Vs
GND (M)
CAP +B
CAP FWD
FG (2)
GND
FG (1)
FG +B
CN001 (WHT)
CAP FG (2)
GND
CAP FG (1)
FG +B
REEL Vs
GND (M)
REEL FWD
AC 6V
AC 6V
POWR ON
UN −30V
TO POWER BLOCK (SR-21) CN004
CN010 (WHT)
REEL Vs
GND (M)
REEL FWD
REEL +B
REEL FB
CN015 (RED)
AC 6V
AC 6V
POWER ON IN
UNSWD −30V OUT
TO FL-9 BOARD CN101
RD-17 BOARD
T LD 5V
COMMON OUT
S LD 5V
REEL FG OUT
PC002
PC001
PC001,002 NJL5141E-AC
LM-17 BOARD
L1 18μH
L2 18μH
C1 0.033
C2 0.033
M904 LOADING MOTOR
CAPSTAN MOTOR BOARD (M902)
CNP2
D1
Q1
Q2
Q3
Q4
Q5
Q6
CN1 (WHT)
CAP Vs
GND (M)
CAP +B
CAP FWD
FG (2)
GND
FG (1)
FG +B
RM1
IC1
INPUT AMP
PHASE SW
3 PHASE 120° LOGIC
OUTPUT AMP
H1
H2
R1
R2
R3
R4
R5
R6
R7
R8
REEL MOTOR BOARD (M903)
H1,2 THS103A-1
VCC2
VCC1
AMP
LOGIC SECTION
CONTROL BLOCK
P (SOURCE)
N (SINK)
GND
FRC
STOP
VC
CD
RF
IC1 LB1620
R1 470
R2 1.5k
R3 47k
R4 47k
R5 47k
R6 47k
C1 47 16V
C2 47 16V
C3 47 16V
C4 47 16V
CN1 (WHT)
REEL FG
REEL + B
REEL REV
GND (M)
REEL Vs

SS-50 BOARD



1-5. SS-50 (SERVO, SYSTEM CONTROL), OC-1 (SKIP SWIT

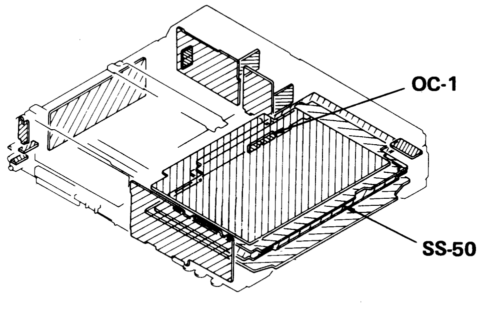
– Ref. No. SS-50 BOARD: 2,000 series, OC-1 BOARD: 9,500 series,

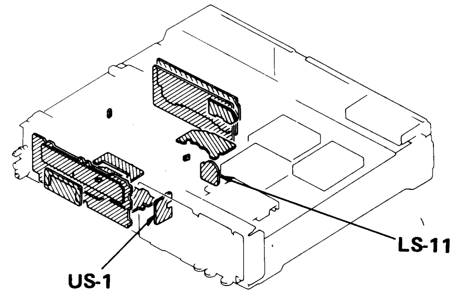
1 2 3 4

A B C D E F G H I J

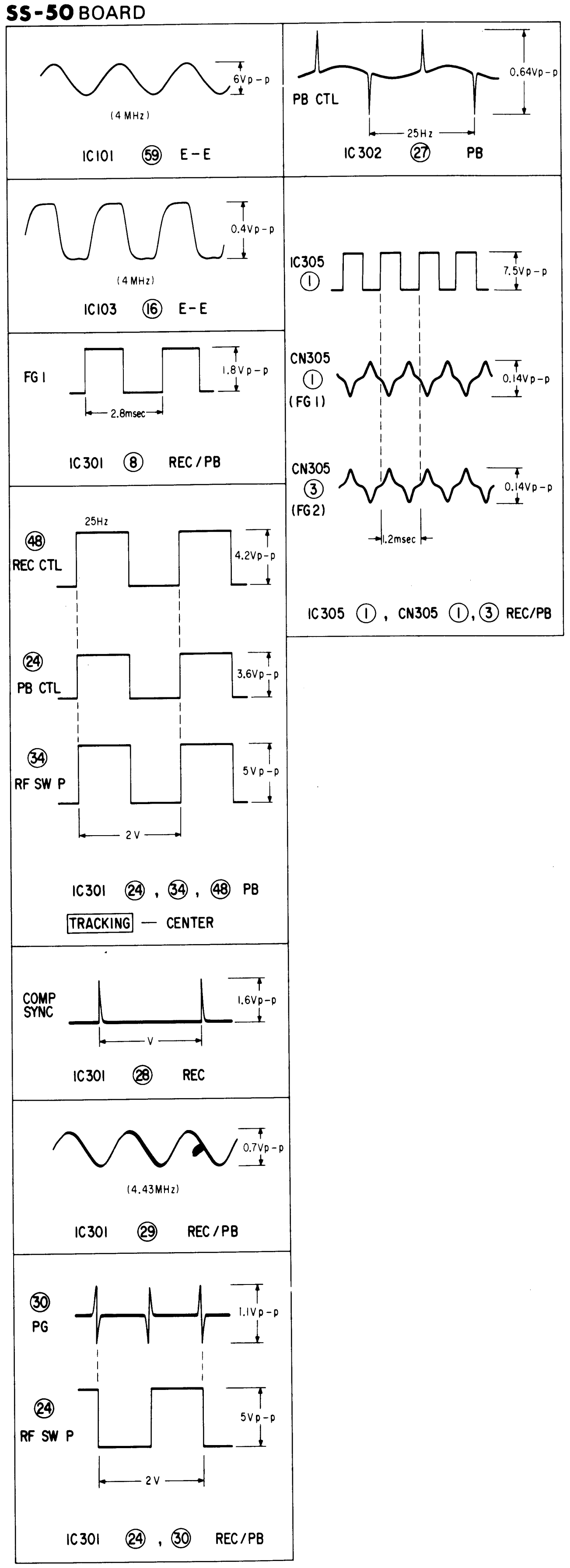
- ○— : Indicates a leadwire mounted on the component side.
- ●— : Indicates a leadwire mounted on the printed sied.
- ▒ : soldering side.
- ░ : B+ pattern
- Digital transistor (SS-50: Q101, 102, 103, 104, 105, 109, 111, 112, 301, 302, 303, 304, 310, 311, 314, 317, 318, 319, 323, 326, 327, 331, 335, 337, 339, 340, 341, 343, 344, 350, 351, 352, 353, 354, 355, 360, 361, 362, 364, 365, 612, 613, 614. QV-1: Q200, 201, 202, 203) transistors with resistors.
  Refer to the SS-50 and QV-1 boards schematic diagram for digital transistor.

When indicating parts by reference number, please include the board name.





SS-50 BOARD

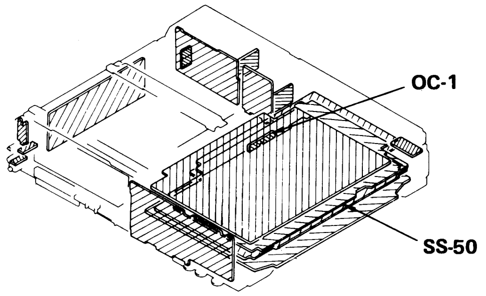


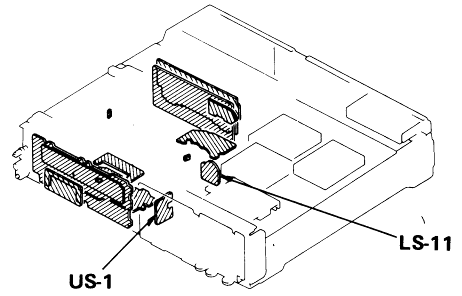
1-5. SS-50 (SERVO, SYSTEM CONTROL), OC-1 (SKIP SWITCH), US-1 (SKIP SWITCH), LS-11 (SKATE MOTOR) PRINTED WIRING BOARDS

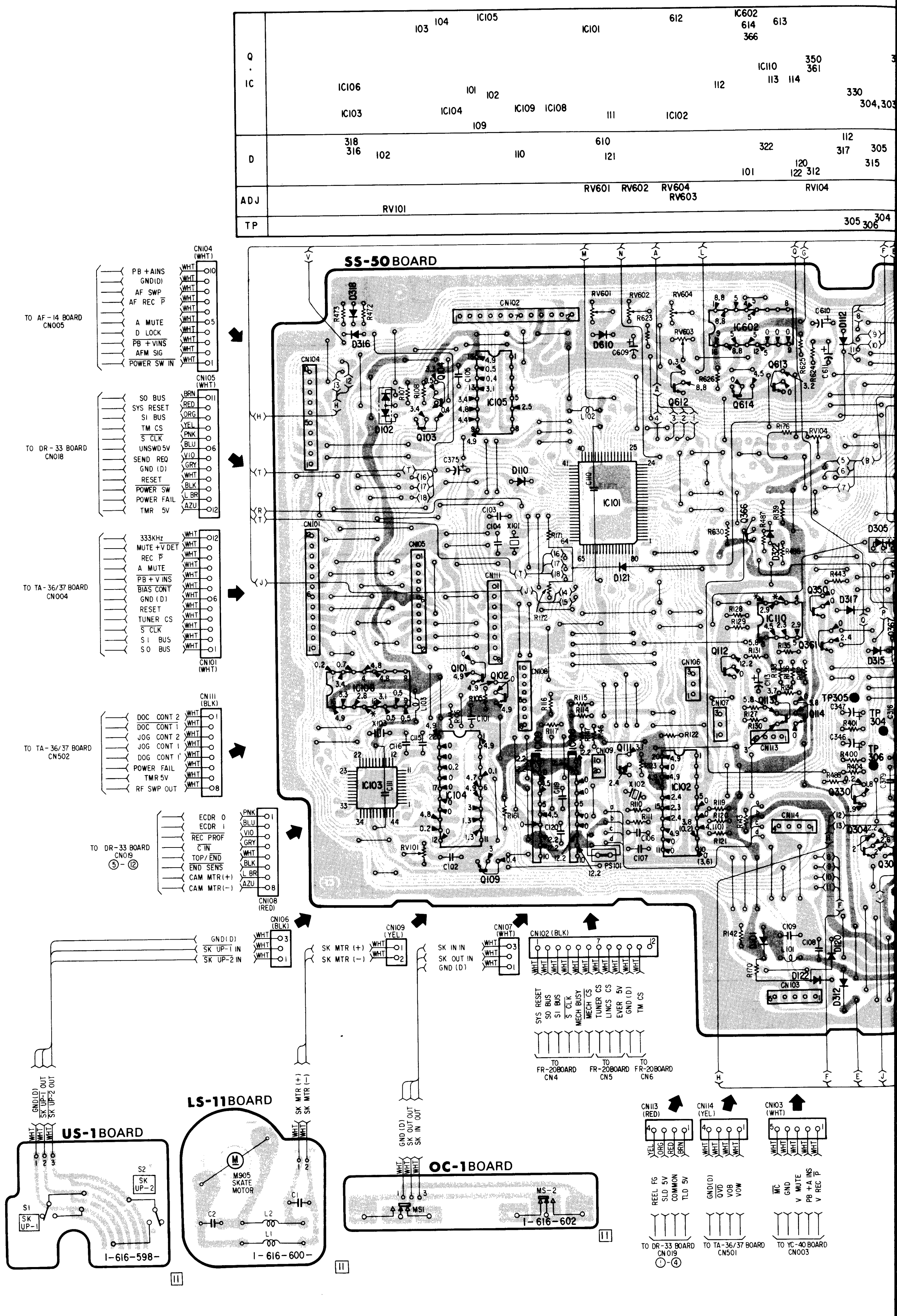
– Ref. No. SS-50 BOARD: 2,000 series, OC-1 BOARD: 9,500 series, US-1 BOARD: 9,500 series, LS-11 BOARD: 9,500 series –

- ○— : Indicates a leadwire mounted on the component side.
- ●— : Indicates a leadwire mounted on the printed sied.
- ▨ : soldering side.
- ▨ : B+ pattern
- Digital transistor (SS-50: Q101, 102, 103, 104, 105, 109, 111, 112, 301, 302, 303, 304, 310, 311, 314, 317, 318, 319, 323, 326, 327, 331, 335, 337, 339, 340, 341, 343, 344, 350, 351, 352, 353, 354, 355, 360, 361, 362, 364, 365, 612, 613, 614. QV-1: Q200, 201, 202, 203) transistors with resistors.
  Refer to the SS-50 and QV-1 boards schematic diagram for digital transistor.

When indicating parts by reference number, please include the board name.



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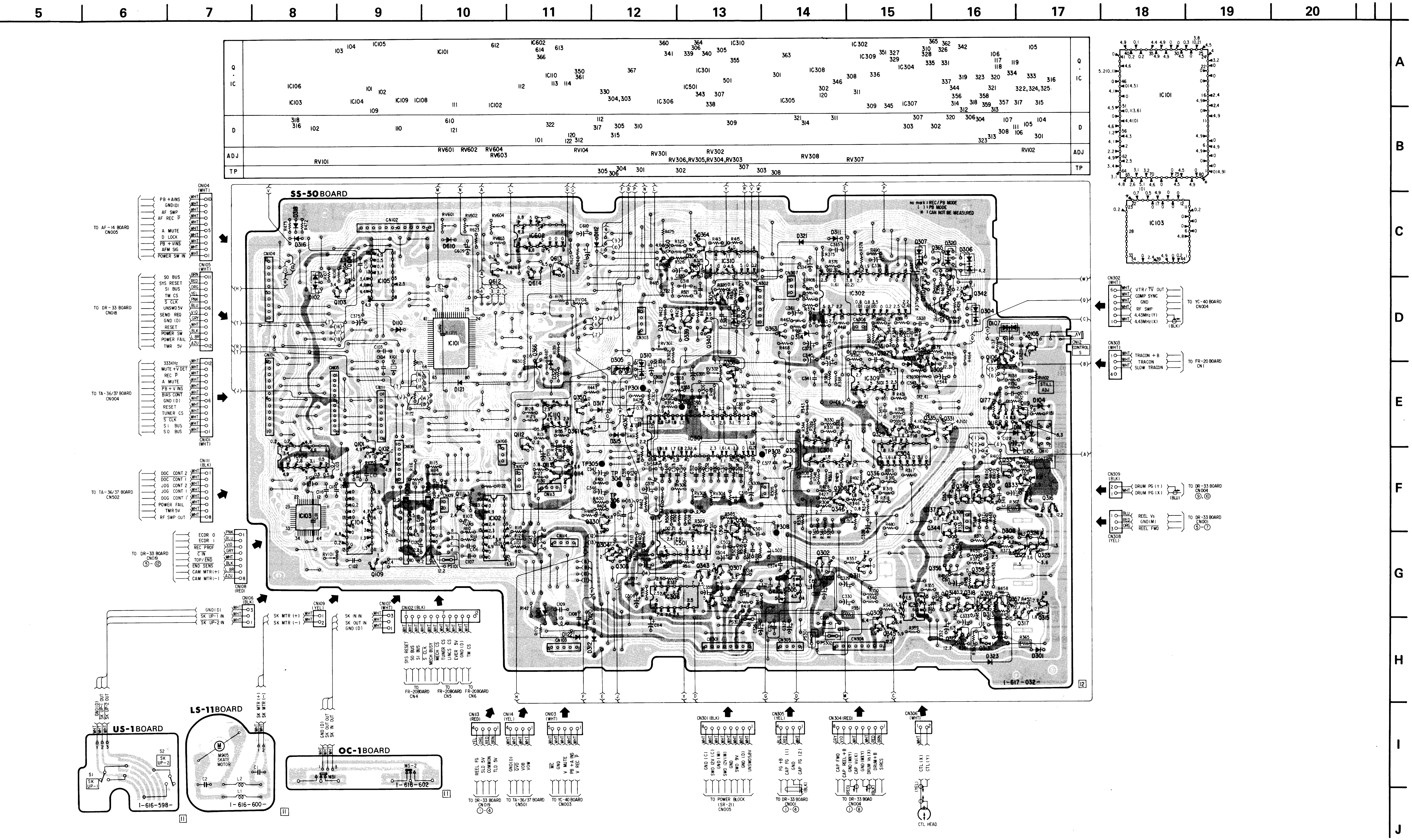
A
B
C
D
E
F
G
H
I
J
Q · IC
D
ADJ
TP
RV601 RV602 RV604 RV603
RV101
RV104
SS-50 BOARD
TO AF-14 BOARD CN005
PB +AINS
GND(D)
AF SWP
AF REC P
A MUTE
D LOCK
PB +VINS
AFM SIG
POWER SW IN
CN104 (WHT)
TO DR-33 BOARD CN018
SO BUS
SYS RESET
SI BUS
TM CS
S CLK
UNSWD 5V
SEND REQ
GND (D)
RESET
POWER SW
POWER FAIL
TMR 5V
CN105 (WHT)
TO TA-36/37 BOARD CN004
333KHz
MUTE +V DET
REC P
A MUTE
PB +V INS
BIAS CONT
GND (D)
RESET
TUNER CS
S CLK
SI BUS
SO BUS
CN101 (WHT)
TO TA-36/37 BOARD CN502
DOC CONT 2
DOC CONT 1
JOG CONT 2
JOG CONT 1
DOG CONT 1
POWER FAIL
TMR 5V
RF SWP OUT
CN111 (BLK)
TO DR-33 BOARD CN015 ⑤-⑫
ECDR 0
ECDR 1
REC PROF
C IN
TOP/END
END SENS
CAM MTR(+)
CAM MTR(-)
CN108 (RED)
GND(D)
SK UP-1 IN
SK UP-2 IN
CN106 (BLK)
SK MTR (+)
SK MTR (-)
CN109 (YEL)
SK IN IN
SK OUT IN
GND (D)
CN107 (WHT)
CN102 (BLK)
SYS RESET
SO BUS
SI BUS
S CLK
MECH BUSY
MECH CS
TUNER CS
LINCS
EVER 5V
GND (D)
TM CS
TO FR-20BOARD CN4
TO FR-20BOARD CN5
TO FR-20BOARD CN6
IC101
IC102
IC103
IC104
IC105
IC106
IC109
IC110
IC602
US-1 BOARD
S1 SK UP-1
S2 SK UP-2
1-616-598-
LS-11 BOARD
M905 SKATE MOTOR
1-616-600-
OC-1 BOARD
MS-2
MS1
1-616-602
CN113 (RED)
CN114 (YEL)
CN103 (WHT)
REEL FG
SLD 5V
COMMON
TLD 5V
GND(D)
GVD
V08
VGW
WE
GND
PB +A INS
V MUTE
V REC P
TO DR-33 BOARD CN019 ①-④
TO TA-36/37 BOARD CN501
TO YC-40 BOARD CN003

JS-1 (SKIP SWITCH), LS-11 (SKATE MOTOR) PRINTED WIRING BOARDS

OARD: 9,500 series, LS-11 BOARD: 9,500 series –

	8	9	10	11	12	13	14	15	16	17
Q · IC	IC106, IC103	103, 104, IC105, 101, 102, IC104, 109, IC109, IC108	IC101, 612, 111, IC102	IC602, 614, 366, 613, IC110, 113, 114, 112, 350, 361	367, 330, 304,303, 360, 341, IC306	364, 306, 339, 340, 305, IC310, 355, IC301, 501, IC501, 343, 307, 338	363, 301, IC308, 346, 302, 120, IC305	IC302, IC309, 351, 327, 329, IC304, 308, 336, 311, 309, 345, IC307, 310, 328, 335	365, 362, 326, 342, 331, 106, 117, 118, 119, 337, 319, 323, 320, 334, 344, 321, 356, 358, 314, 318, 359, 313, 312, 357	105, 333, 316, 322,324,325, 317, 315
D	318, 316, 102	110	610, 121	322, 101, 120, 122, 312	112, 317, 305, 315, 310	309	321, 314, 311	307, 303	302, 320, 306, 304, 107, 323, 313, 308, 111	105, 106, 104, 301
ADJ	RV101		RV601, RV602, RV604, RV603	RV104	RV301	RV302, RV306,RV305,RV304,RV303	RV308	RV307		RV102
TP					305, 306, 304, 301	302, 307	303, 308			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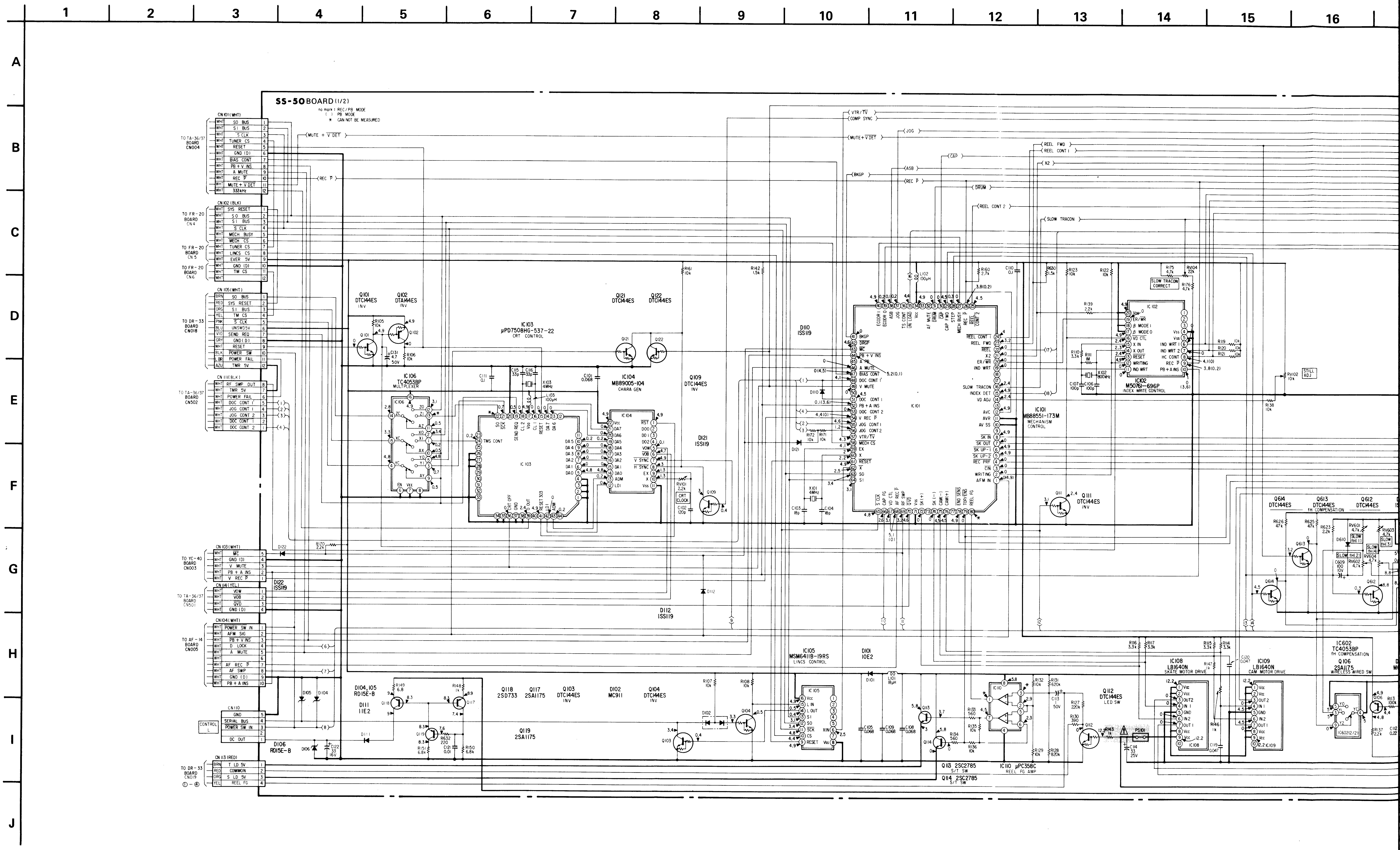
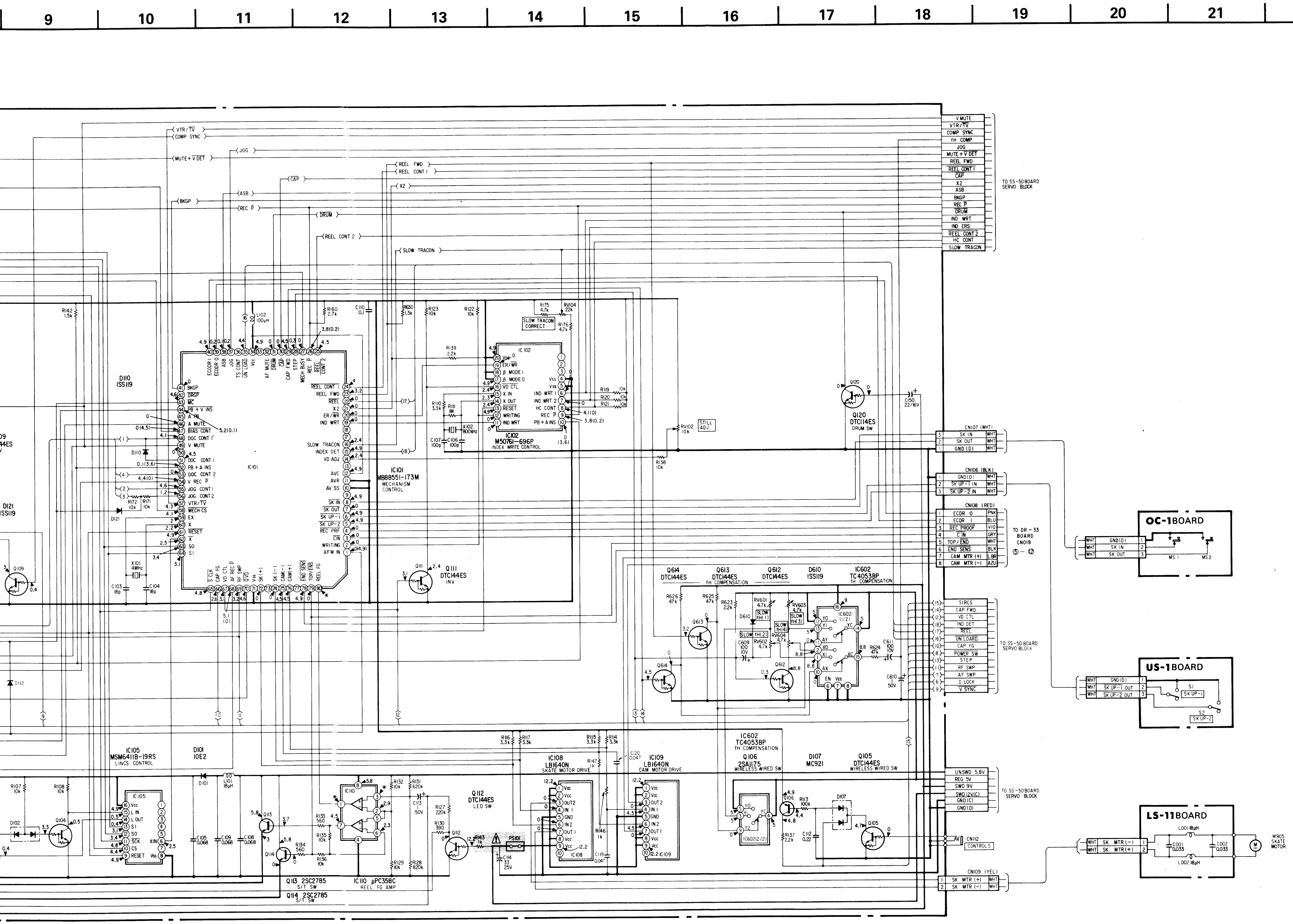
I
J
SS-50 BOARD
no mark : REC/PB MODE
( ) : PB MODE
* : CAN NOT BE MEASURED
IC101
IC103
CN104 (WHT)
PB + AINS
GND (D)
AF SWP
AF REC P̄
A MUTE
D LOCK
PB + VINS
AFM SIG
POWER SW IN
TO AF-14 BOARD CN005
CN105 (WHT)
SO BUS
SYS RESET
SI BUS
TM CS
S CLK
UNSW0 5V
SEND REQ
GND (D)
RESET
POWER SW
POWER FAIL
TMR 5V
TO DR-33 BOARD CN018
333KHz
MUTE + V DET
REC P̄
A MUTE
PB + VINS
BIAS CONT
GND (D)
RESET
TUNER CS
S CLK
SI BUS
SO BUS
CN101 (WHT)
TO TA-36/37 BOARD CN004
CN111 (BLK)
DOC CONT 2
DOC CONT 1
JOG CONT 2
JOG CONT 1
DOG CONT 1
POWER FAIL
TMR 5V
RF SWP OUT
TO TA-36/37 BOARD CN502
ECDR 0
ECDR 1
REC PROF
C IN
TOP/END
END SENS
CAM MTR (+)
CAM MTR (–)
CN108 (RED)
TO DR-33 BOARD CN019 ⑤-⑫
CN106 (BLK)
GND (D)
SK UP-1 IN
SK UP-2 IN
CN109 (YEL)
SK MTR (+)
SK MTR (–)
SK IN IN
SK OUT IN
GND (D)
CN107 (WHT)
CN102 (BLK)
SYS RESET
SO BUS
SI BUS
S CLK
MECH BUSY
MECH CS
TUNER CS
LINES CS
EVER 5V
GND (D)
TM CS
TO FR-20 BOARD CN4
TO FR-20 BOARD CN5
TO FR-20 BOARD CN6
US-1 BOARD
SK UP-1
SK UP-2
S1
S2
1-616-598-
LS-11 BOARD
M905 SKATE MOTOR
1-616-600-
OC-1 BOARD
MS1
MS-2
1-618-602
1-617-032-
CN302 (WHT)
VTR/TV OUT
COMP SYNC
GND
RF SWP
4.43MHz (Y)
4.43MHz (X)
TO YC-40 BOARD CN004
CN303 (WHT)
TRACON + B
TRACON
SLOW TRACON
TO FR-20 BOARD CN1
CN309 (BLK)
DRUM PG (Y)
DRUM PG (X)
TO DR-33 BOARD CN004 ⑨,⑩
CN308 (YEL)
REEL Vs
GND (M)
REEL FWD
TO DR-33 BOARD CN001 ⑤-⑦
CN113 (RED)
REEL FG
SLD 5V
COMMON
TLD 5V
TO DR-33 BOARD CN019 ①-④
CN114 (YEL)
GND (D)
QVD
VDO
VDW
TO TA-36/37 BOARD CN501
CN103 (WHT)
M2
V MUTE
PB + AINS
V REC P̄
TO YC-40 BOARD CN003
CN301 (BLK)
GND (C)
SWD 12V (C)
GND (M)
SWD 12V (M)
GND
SWD 9V
GND (D)
UNSW0 5.8V
TO POWER BLOCK (SR-21) CN005
CN305 (YEL)
FG + B
CAP FG (1)
GND
CAP FG (2)
TO DR-33 BOARD CN001 ①-④
CN304 (RED)
CAP FWD
CAP REEL + B
GND (M)
CAP Vs (X)
GND (M)
DRUM Vs
DRUM + B
SIRCS
TO DR-33 BOARD CN004 ①-⑧
CN306 (WHT)
CTL (X)
CTL (Y)
CTL HEAD
STILL ADJ
CONTROL S
11
12

SS-50 (SERVO, SYSTEM CONTROL), OC-1 (SKIP SWITCH), US-1 (SKIP SWITCH), LS-11 (SKATE MOTOR) SCHEMATIC DIAGRAMS

– Ref. No. SS-50 BOARD: 2,000 series, OC-1 BOARD: 9,500 series, US-1 BOARD: 9,500 series, LS-11 BOARD: 9,500 series –



SS-50 BOARD (1/2)
no mark : REC/PB MODE
( ) PB MODE
* CAN NOT BE MEASURED
CN101 (WHT)
TO TA-36/37 BOARD CN004
CN102 (BLK)
TO FR-20 BOARD CN4
TO FR-20 BOARD CN5
TO FR-20 BOARD CN6
CN105 (WHT)
TO DR-33 BOARD CN018
CN111 (BLK)
TO TA-36/37 BOARD CN502
CN103 (WHT)
TO YC-40 BOARD CN003
CN114 (YEL)
TO TA-36/37 BOARD CN501
CN104 (WHT)
TO AF-14 BOARD CN005
CN110
CONTROL L
CN113 (RED)
TO DR-33 BOARD CN019 ①-④
Q101 DTC144ES INV
Q102 DTA144ES INV
IC103 μPD7508HG-537-22 CRT CONTROL
IC106 TC4053BP MULTIPLEXER
IC104 MB89005-104 CHARA GEN
Q121 DTC144ES
Q122 DTC144ES
Q109 DTC144ES INV
D121 1SS119
D110 1SS119
D122 1SS119
D112 1SS119
IC101 MB88551-173M MECHANISM CONTROL
IC102 M50761-696P INDEX WRITE CONTROL
SLOW TRACON CORRECT
STILL ADJ
Q111 DTC144ES INV
Q614 DTC144ES
Q613 DTC144ES fH COMPENSATION
Q612 DTC144ES
IC602 TC4053BP fH COMPENSATION
Q106 2SA1175 WIRELESS WIRED SW
IC105 MSM6411B-19RS LINCS CONTROL
D101 10E2
D104, 105 RD15E-B
D111 11E2
D106 RD15E-B
Q118 2SD733
Q117 2SA1175
Q103 DTC144ES INV
D102 MC911
Q104 DTC144ES INV
Q119 2SA1175
Q113 2SC2785 S/T SW
Q114 2SC2785 S/T SW
IC110 μPC358C REEL FG AMP
Q112 DTC144ES LED SW
PS101
IC108 LB1640N SKATE MOTOR DRIVE
IC109 LB1640N CAM MOTOR DRIVE
X101 4MHz
X102 800kHz
X103 4MHz
CRT CLOCK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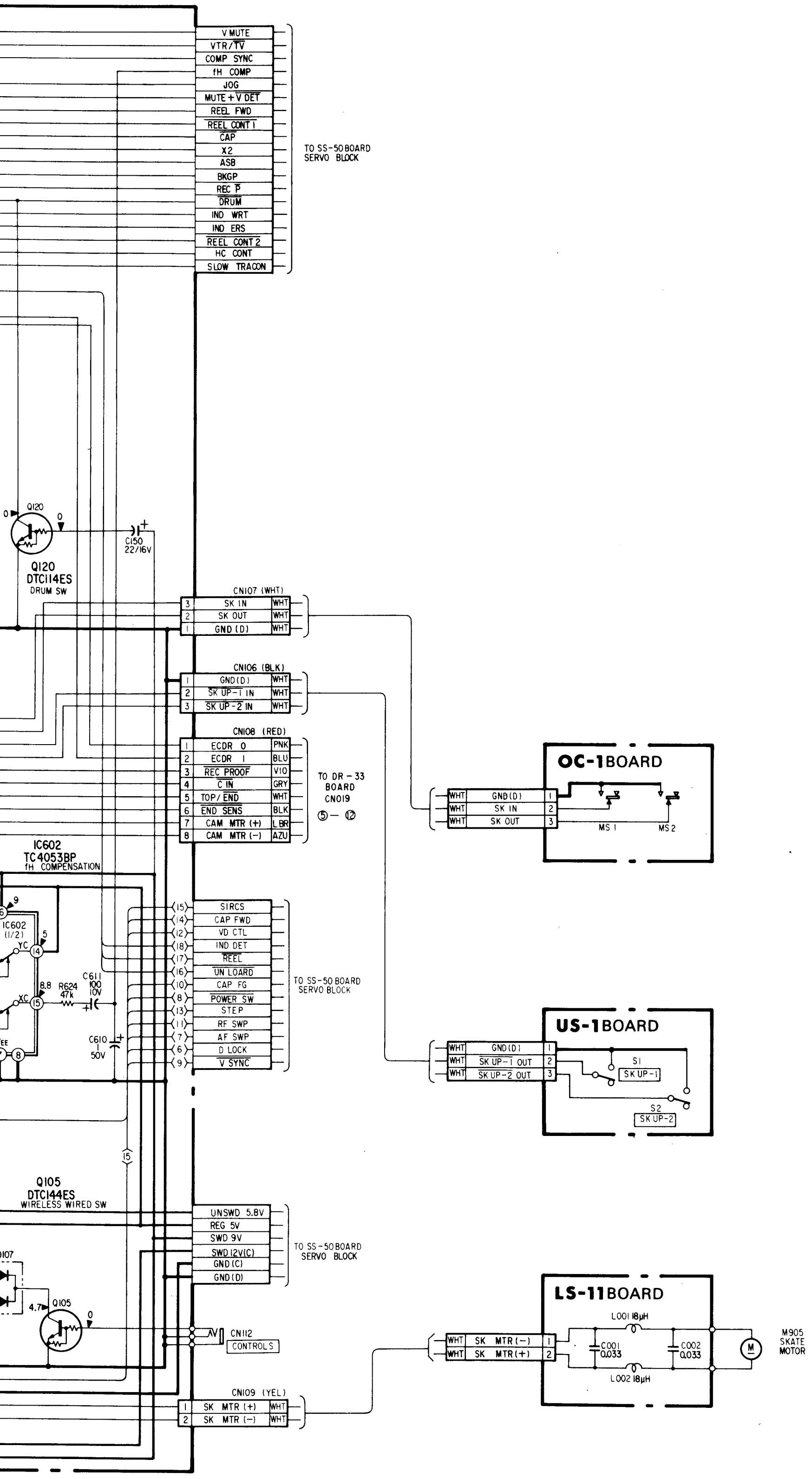
24
25
VTR/TV
COMP SYNC
JOG
MUTE+V DET
CAP
REEL FWD
REEL CONT 1
X2
BKGP
ASB
REC P
DRUM
REEL CONT 2
SLOW TRACON
V MUTE
fH COMP
IND WRT
IND ERS
HC CONT
TO SS-50 BOARD SERVO BLOCK
IC101 MB88551-173M MECHANISM CONTROL
IC102 M50761-696P INDEX WRITE CONTROL
X101 4MHz
X102 800kHz
D110 1SS119
D121 1SS119
Q109
Q111 DTC144ES INV
Q120 DTC114ES DRUM SW
RV102 10k STILL ADJ
SLOW TRACON CORRECT
CN107 (WHT)
SK IN
SK OUT
GND (D)
CN106 (BLK)
SK UP-1 IN
SK UP-2 IN
CN108 (RED)
ECDR 0
ECDR 1
REC PROOF
C IN
TOP/END
END SENS
CAM MTR (+)
CAM MTR (−)
TO DR-33 BOARD CN019
OC-1 BOARD
MS1
MS2
Q614 DTC144ES
Q613 DTC144ES fH COMPENSATION
Q612 DTC144ES
D610 1SS119
IC602 TC4053BP fH COMPENSATION
SIRCS
CAP FWD
VD CTL
IND DET
REEL
UN LOAD
CAP FG
POWER SW
STEP
RF SWP
AF SWP
D LOCK
V SYNC
US-1 BOARD
S1 SK UP-1
S2 SK UP-2
IC105 MSM6411B-19RS LINCS CONTROL
D101 10E2
IC108 LB1640N SKATE MOTOR DRIVE
IC109 LB1640N CAM MOTOR DRIVE
IC602 TC4053BP fH COMPENSATION
Q106 2SA1175 WIRELESS WIRED SW
D107 MC921
Q105 DTC144ES WIRELESS WIRED SW
Q112 DTC144ES LED SW
PS101
Q113 2SC2785 S/T SW
Q114 2SC2785 S/T SW
IC110 μPC358C REEL FG AMP
UNSWD 5.8V
REG 5V
SWD 9V
SWD 12V(C)
GND (C)
GND (D)
CN112 CONTROLS
CN109 (YEL)
SK MTR (+)
SK MTR (−)
LS-11 BOARD
L001 18μH
L002 18μH
C001 0.033
C002 0.033
M905 SKATE MOTOR

- All resistors are in
kΩ: 1000 Ω, MΩ:
- All capacitors are
50WV or less are
- All variable and a
curve B, unless othe
- ⊞ : nonflamma
- ⊡ : fusible resis
- The red lines show
- All voltages are dc
- ▬ : B+ bus.

Note: The compo
⚠ are cri
part numb

When indicating pa
ence number, ple
the board name.

MC-Service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A
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C
D
E
F
G
H
I
J
V MUTE
VTR/TV
COMP SYNC
fH COMP
JOG
MUTE + V DET
REEL FWD
REEL CONT 1
CAP
X2
ASB
BKGP
REC P
DRUM
IND WRT
IND ERS
REEL CONT 2
HC CONT
SLOW TRACON
TO SS-50 BOARD SERVO BLOCK
Q120
Q120 DTC114ES DRUM SW
C150 22/16V
CN107 (WHT)
SK IN
SK OUT
GND (D)
CN106 (BLK)
GND (D)
SK UP-1 IN
SK UP-2 IN
CN108 (RED)
ECDR 0
ECDR 1
REC PROOF
C IN
TOP/END
END SENS
CAM MTR (+)
CAM MTR (−)
PNK
BLU
VIO
GRY
WHT
BLK
LBR
AZU
TO DR-33 BOARD CN019 ⑤-⑫
OC-1 BOARD
GND (D)
SK IN
SK OUT
MS 1
MS 2
IC602 TC4053BP fH COMPENSATION
IC602 (1/2)
YC
XC
8.8
R624 47k
C611 100 10V
C610 1 50V
SIRCS
CAP FWD
VD CTL
IND DET
REEL
UN LOARD
CAP FG
POWER SW
STEP
RF SWP
AF SWP
D LOCK
V SYNC
TO SS-50 BOARD SERVO BLOCK
US-1 BOARD
GND (D)
SK UP-1 OUT
SK UP-2 OUT
S1 SK UP-1
S2 SK UP-2
Q105 DTC144ES WIRELESS WIRED SW
UNSWD 5.8V
REG 5V
SWD 9V
SWD 12V(C)
GND (C)
GND (D)
TO SS-50 BOARD SERVO BLOCK
Q105
4.7
CN112 CONTROLS
CN109 (YEL)
SK MTR (+)
SK MTR (−)
LS-11 BOARD
SK MTR (−)
SK MTR (+)
L001 18μH
L002 18μH
C001 0.033
C002 0.033
M905 SKATE MOTOR

- All resistors are in ohms, $1/6$ W unless otherwise noted. kΩ: 1000 Ω, MΩ: 1000 kΩ
- All capacitors are in μF unless otherwise noted. p: μμF 50WV or less are not indicated except for electrolytics.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ⊏W⊐ : nonflammable resistor.
- ⊏W∿⊐ : fusible resistor.
- The red lines show the main voltages.
- All voltages are dc measured with a VOM (10 MΩ).
- ━━ : B+ bus.

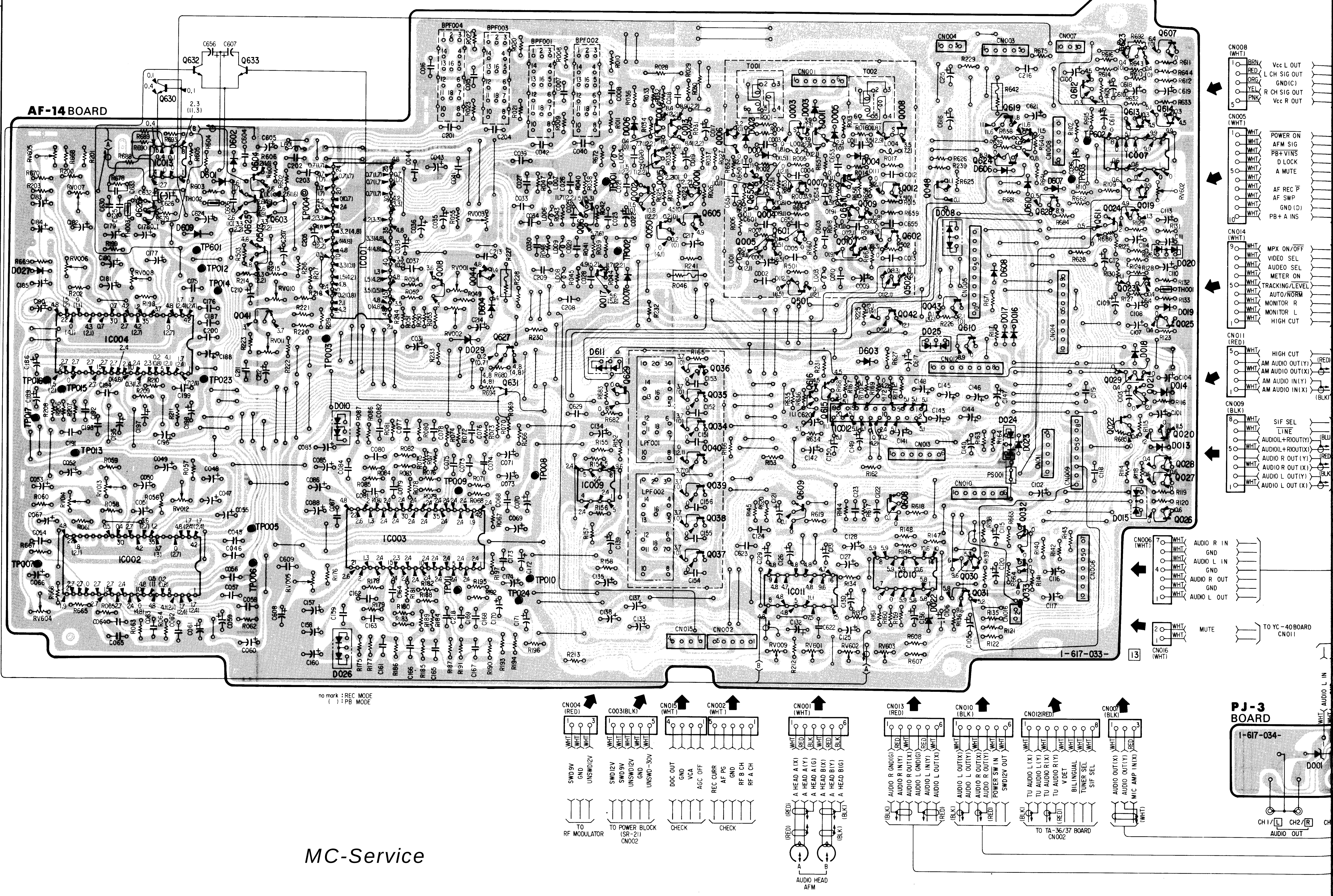
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

1-6. AF-14 (AFM SIGNAL PROCESS), PJ-3 (AUDIO IN/OUT JACKS), FL-8 (INDICATOR), DH-4 (A/V HEAD AMP), PW-15 (POWER SWITCH, HEADPHONE LEVEL), DR-33 (SYSTEM CONTROL, SIGNAL TRANSLATION), MC-10 (MICROPHONE JACK), HP-18 (HEADP

– Ref. No. AF-14 BOARD: 3,000 series, PJ-3 BOARD: 9,500 series, FL-8 BOARD: 9,600 series, DH-4 BOARD: 7,000 series, PW-15 BOARD: 12,000 series, DR-33 BOARD: 9,300 series, MC-10 BOARD: 13,000 series, HP-18 BOARD: 9,800 series –

	Q , IC	D	ADJ	TP
A	607			
B	623 632,633 630 612 614 014,013 619 613 003 011 008 621	003 006 002 005		
C	006 IC007 IC013 015 624 IC001 650 651 604 007 048 002,001 012 019 625,603 004 628 626 016 009 024 611 605 050 601 602	001 004 602 606 601 610,607 008	RV605 RV602 RV007 RV003	602 001 004 603
D	005 010 503 017 502 023 044 501 018 043 042 025 041 IC004 610	609 020 608 027 007 019 604 017,016 029 025	RV006 RV001 RV008 RV010 RV002	601 002 012 014
E	627 036 029 615 629 616 021 631 035 IC012 022 034 020	611 018 603 014 010	RV011	003 016 023 015 017
F	040 028 IC009 027 039 608 609 026 038 IC003 032	024,023 013 015	RV013 RV012 RV014	013 008 009 005
G	IC002 037 030 033 IC010 IC011 031	022	RV005 RV604	007 006 010 011 024
H		026	RV009,RV601 RV602,RV603	
	Q , IC	D	ADJ	TP

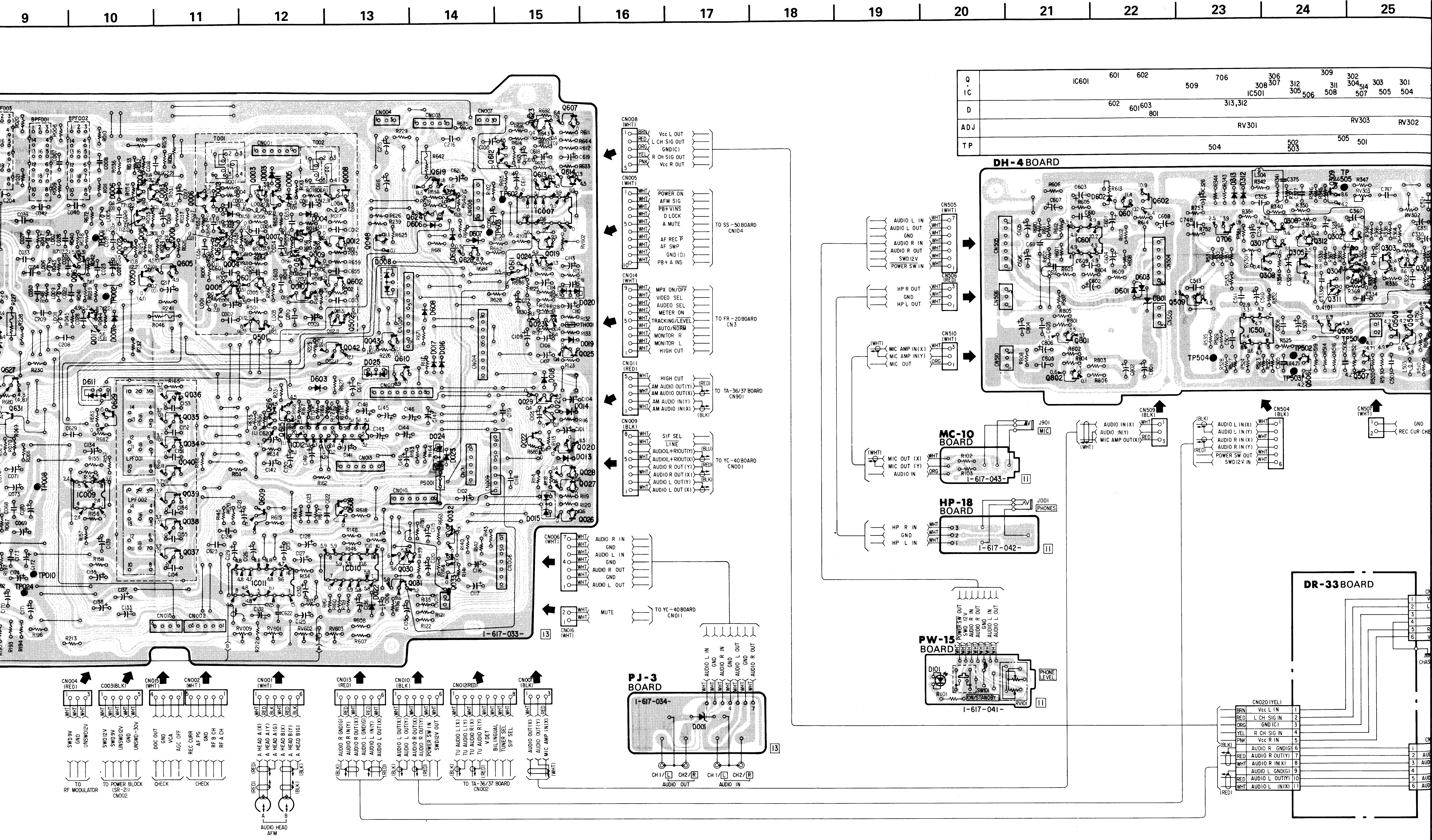


AF-14 BOARD
1-617-033-
13
no mark : REC MODE
( ) : PB MODE
CN008 (WHT)
BRN RED ORG YEL PNK
Vcc L OUT
L CH SIG OUT
GND(C)
R CH SIG OUT
Vcc R OUT
CN005 (WHT)
POWER ON
AFM SIG
PB+VINS
D LOCK
A MUTE
AF REC P
AF SWP
GND(D)
PB+A INS
CN014 (WHT)
MPX ON/OFF
VIDEO SEL
AUDEO SEL
METER ON
TRACKING/LEVEL
AUTO/NORM
MONITOR R
MONITOR L
HIGH CUT
CN011 (RED)
HIGH CUT
AM AUDIO OUT(Y)
AM AUDIO OUT(X)
AM AUDIO IN(Y)
AM AUDIO IN(X)
CN009 (BLK)
SIF SEL
LINE
AUDIO(L+R)OUT(Y)
AUDIO(L+R)OUT(X)
AUDIO R OUT (Y)
AUDIO R OUT (X)
AUDIO L OUT(Y)
AUDIO L OUT (X)
CN006 (WHT)
AUDIO R IN
GND
AUDIO L IN
GND
AUDIO R OUT
GND
AUDIO L OUT
CN016 (WHT)
MUTE
TO YC-40 BOARD CN011
CN004 (RED)
SWD9V
GND
UNSWD12V
TO RF MODULATOR
C003(BLK)
SWD12V
SWD9V
UNSWD12V
GND
UNSWD-30V
TO POWER BLOCK (SR-21) CN002
CN015 (WHT)
DOC OUT
GND
VCA
AGC OFF
CHECK
CN002 (WHT)
REC CURR
AF PG
GND
RF B CH
RF A CH
CHECK
CN001 (WHT)
A HEAD A(X)
A HEAD A(Y)
A HEAD A(G)
A HEAD B(X)
A HEAD B(Y)
A HEAD B(G)
A
B
AUDIO HEAD AFM
CN013 (RED)
AUDIO R GND(G)
AUDIO R IN(Y)
AUDIO R OUT(X)
AUDIO L GND(G)
AUDIO L IN(Y)
AUDIO L OUT(X)
CN010 (BLK)
AUDIO L OUT(X)
AUDIO L OUT(Y)
AUDIO R OUT(X)
AUDIO R OUT(Y)
POWER SW IN
SWD12V OUT
CN012(RED)
TU AUDIO L(X)
TU AUDIO L(Y)
TU AUDIO R(X)
TU AUDIO R(Y)
V DET
BILINGUAL
TUNER SEL
SIF SEL
TO TA-36/37 BOARD CN002
CN007 (BLK)
AUDIO OUT(X)
AUDIO OUT(Y)
MIC AMP IN(X)
PJ-3 BOARD
1-617-034-
D001
CH1/L
CH2/R
AUDIO OUT
AUDIO L IN

WITCH, HEADPHONE LEVEL), DR-33 (SYSTEM CONTROL, SIGNAL TRANSLATION), MC-10 (MICROPHONE JACK), HP-18 (HEADPHONE JACK) PRINTED WIRING BOARDS

-33 BOARD: 9,300 series, MC-10 BOARD: 13,000 series, HP-18 BOARD: 9,800 series –

	21	22	23	24	25
Q · IC	IC601	601 602	509 706 308 IC501	306 307 312 305 506 309 311 508	302 304 514 507 303 505 301 504
D		602 601 603 801	313,312		
ADJ			RV301		RV303 RV302
TP			504	502 503 505	501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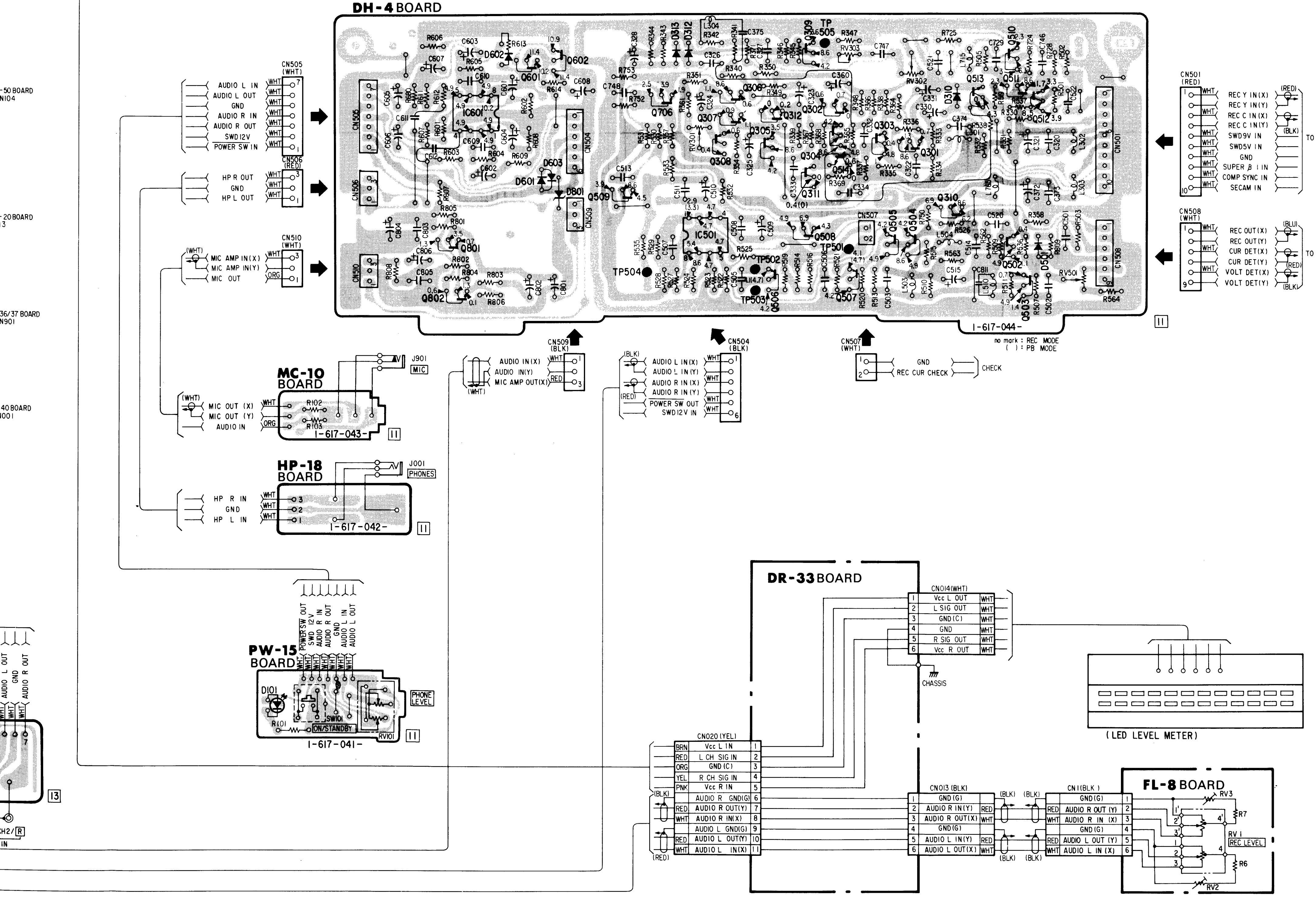
DH-4 BOARD
MC-10 BOARD
1-617-043-
HP-18 BOARD
1-617-042-
PW-15 BOARD
1-617-041-
ON/STANDBY
PHONE LEVEL
PJ-3 BOARD
1-617-034-
DR-33 BOARD
1-617-033-
CN008 (WHT)
Vcc L OUT
L CH SIG OUT
GND(C)
R CH SIG OUT
Vcc R OUT
CN005 (WHT)
POWER ON
AFM SIG
PB+VINS
D LOCK
A MUTE
AF REC P
AF SWP
GND (D)
PB+A INS
TO SS-50 BOARD CN104
CN014 (WHT)
MPX ON/OFF
VIDEO SEL
AUDEO SEL
METER ON
TRACKING/LEVEL
AUTO/NORM
MONITOR R
MONITOR L
HIGH CUT
TO FR-20 BOARD CN3
CN011 (RED)
HIGH CUT
AM AUDIO OUT(Y)
AM AUDIO OUT(X)
AM AUDIO IN(Y)
AM AUDIO IN(X)
TO TA-36/37 BOARD CN901
CN009 (BLK)
SIF SEL
LINE
AUDIO(L+R)OUT(Y)
AUDIO(L+R)OUT(X)
AUDIO R OUT(Y)
AUDIO R OUT(X)
AUDIO L OUT(Y)
AUDIO L OUT(X)
TO YC-40 BOARD CN001
CN006 (WHT)
AUDIO R IN
GND
AUDIO L IN
GND
AUDIO R OUT
GND
AUDIO L OUT
CN016 (WHT)
MUTE
TO YC-40 BOARD CN011
CN505 (WHT)
AUDIO L IN
AUDIO L OUT
GND
AUDIO R IN
AUDIO R OUT
SWD 12V
POWER SW IN
CN506 (RED)
HP R OUT
GND
HP L OUT
CN510 (WHT)
MIC AMP IN(X)
MIC AMP IN(Y)
MIC OUT
CN509 (BLK)
AUDIO IN(X)
AUDIO IN(Y)
MIC AMP OUT(X)
CN504 (BLK)
AUDIO L IN(X)
AUDIO L IN(Y)
AUDIO R IN(X)
AUDIO R IN(Y)
POWER SW OUT
SWD12V IN
CN507 (WHT)
GND
REC CUR CHE
J901 MIC
MIC OUT (X)
MIC OUT (Y)
AUDIO IN
J001 PHONES
HP R IN
GND
HP L IN
POWER SW OUT
SWD 12V
AUDIO R OUT
AUDIO L OUT
GND
AUDIO R OUT
AUDIO L OUT
AUDIO L IN
GND
AUDIO R IN
GND
AUDIO L OUT
GND
AUDIO R OUT
CH1/L CH2/R AUDIO OUT
CH1/L CH2/R AUDIO IN
CN020 (YEL)
Vcc L IN
L CH SIG IN
GND (C)
R CH SIG IN
Vcc R IN
AUDIO R GND(G)
AUDIO R OUT(Y)
AUDIO R IN(X)
AUDIO L GND(G)
AUDIO L OUT(Y)
AUDIO L IN(X)
CN004 (RED)
SWD 9V
GND
UNSWD12V
TO RF MODULATOR
CN003 (BLK)
SWD12V
SWD 9V
UNSWD12V
GND
UNSWD-30V
TO POWER BLOCK (SR-21) CN002
CN015 (WHT)
DOC OUT
GND
VCA
AGC OFF
CHECK
CN002 (WHT)
REC CURR
AF PG
GND
RF B CH
RF A CH
CHECK
CN001 (WHT)
A HEAD A(X)
A HEAD A(Y)
A HEAD A(G)
A HEAD B(X)
A HEAD B(Y)
A HEAD B(G)
AUDIO HEAD AFM
CN013 (RED)
AUDIO R GND(G)
AUDIO R OUT(X)
AUDIO L GND(G)
AUDIO L IN(Y)
AUDIO L OUT(Y)
CN010 (BLK)
AUDIO L OUT(X)
AUDIO L OUT(Y)
AUDIO R OUT(X)
AUDIO R OUT(Y)
POWER SW IN
SWD12V OUT
CN012 (RED)
TU AUDIO L(X)
TU AUDIO L(Y)
TU AUDIO R(X)
TU AUDIO R(Y)
V DET
BILINGUAL
TUNER SEL
SIF SEL
TO TA-36/37 BOARD CN002
CN007 (BLK)
AUDIO OUT(X)
AUDIO OUT(Y)
MIC AMP IN(X)

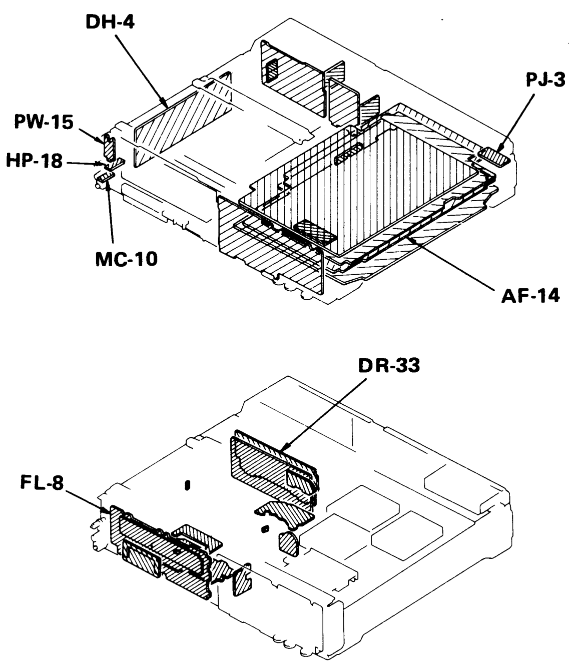
	20	21	22	23	24	25	26	27
Q・IC		IC601	601 602	509 706 IC501	306 307 308 312 305 506 309 311 508	302 304 514 507 303 505 301 504	310 513 510 511 512 502 503	
D			602 601 603 801	313,312			310 501	
ADJ				RV301		RV303 RV302		RV501
TP				504	502 503 505	501		


DH-4 BOARD
CN505 (WHT)
AUDIO L IN
AUDIO L OUT
GND
AUDIO R IN
AUDIO R OUT
SWD12V
POWER SW IN
CN506 (RED)
HP R OUT
GND
HP L OUT
CN510 (WHT)
MIC AMP IN(X)
MIC AMP IN(Y)
MIC OUT
CN501 (RED)
REC Y IN(X)
REC Y IN(Y)
REC C IN(X)
REC C IN(Y)
SWD9V IN
SWD5V IN
GND
SUPER β I IN
COMP SYNC IN
SECAM IN
TO YC-40BOARD CN9
CN508 (WHT)
REC OUT(X)
REC OUT(Y)
CUR DET(X)
CUR DET(Y)
VOLT DET(X)
VOLT DET(Y)
TO RP-31BORD CN702
1-617-044-
no mark : REC MODE
( ) : PB MODE
CN509 (BLK)
AUDIO IN(X)
AUDIO IN(Y)
MIC AMP OUT(X)
CN504 (BLK)
AUDIO L IN(X)
AUDIO L IN(Y)
AUDIO R IN(X)
AUDIO R IN(Y)
POWER SW OUT
SWD12V IN
CN507 (WHT)
GND
REC CUR CHECK
CHECK
TP504
TP505
TP501
TP502
TP503
MC-10 BOARD
J901 MIC
MIC OUT (X)
MIC OUT (Y)
AUDIO IN
1-617-043-
HP-18 BOARD
J001 PHONES
HP R IN
GND
HP L IN
1-617-042-
PW-15 BOARD
POWER SW OUT
SWD 12V
AUDIO R IN
AUDIO R OUT
GND
AUDIO L IN
AUDIO L OUT
D101
R101
SW101 ON/STANDBY
RV101
PHONE LEVEL
1-617-041-
DR-33 BOARD
CN014(WHT)
Vcc L OUT
L SIG OUT
GND(C)
GND
R SIG OUT
Vcc R OUT
CHASSIS
(LED LEVEL METER)
CN020 (YEL)
Vcc L IN
L CH SIG IN
GND(C)
R CH SIG IN
Vcc R IN
AUDIO R GND(G)
AUDIO R OUT(Y)
AUDIO R IN(X)
AUDIO L GND(G)
AUDIO L OUT(Y)
AUDIO L IN(X)
CN013 (BLK)
GND(G)
AUDIO R IN(Y)
AUDIO R OUT(X)
GND(G)
AUDIO L IN(Y)
AUDIO L OUT(X)
CN11(BLK)
AUDIO R OUT (Y)
AUDIO R IN (X)
AUDIO L OUT (Y)
AUDIO L IN (X)
FL-8 BOARD
RV3
R7
RV1 REC LEVEL
R6
RV2
-50 BOARD
-20BOARD
36/37 BOARD
40BOARD

Note on Printed Wiring Board:

- ○—— : Indicates a leadwire mounted on the component side.
- ●—— : Indicates a leadwire mounted on the printed side.
- ▨ : soldering side.
- ▨ : B+ pattern
- Digital transistor (AF-14: Q001, 006, 007, 011, 012, 019, 021, 026, 028, 029, 034, 035, 036, 037, 038, 039, 040, 043, 048, 050, 605, 607, 610, 623, 624, 628) transistors with resistors.
  Refer to the AF-14 board schematic diagram for digital transistor.

When indicating parts by reference number, please include the board name.


DH-4
PJ-3
PW-15
HP-18
MC-10
AF-14
DR-33
FL-8

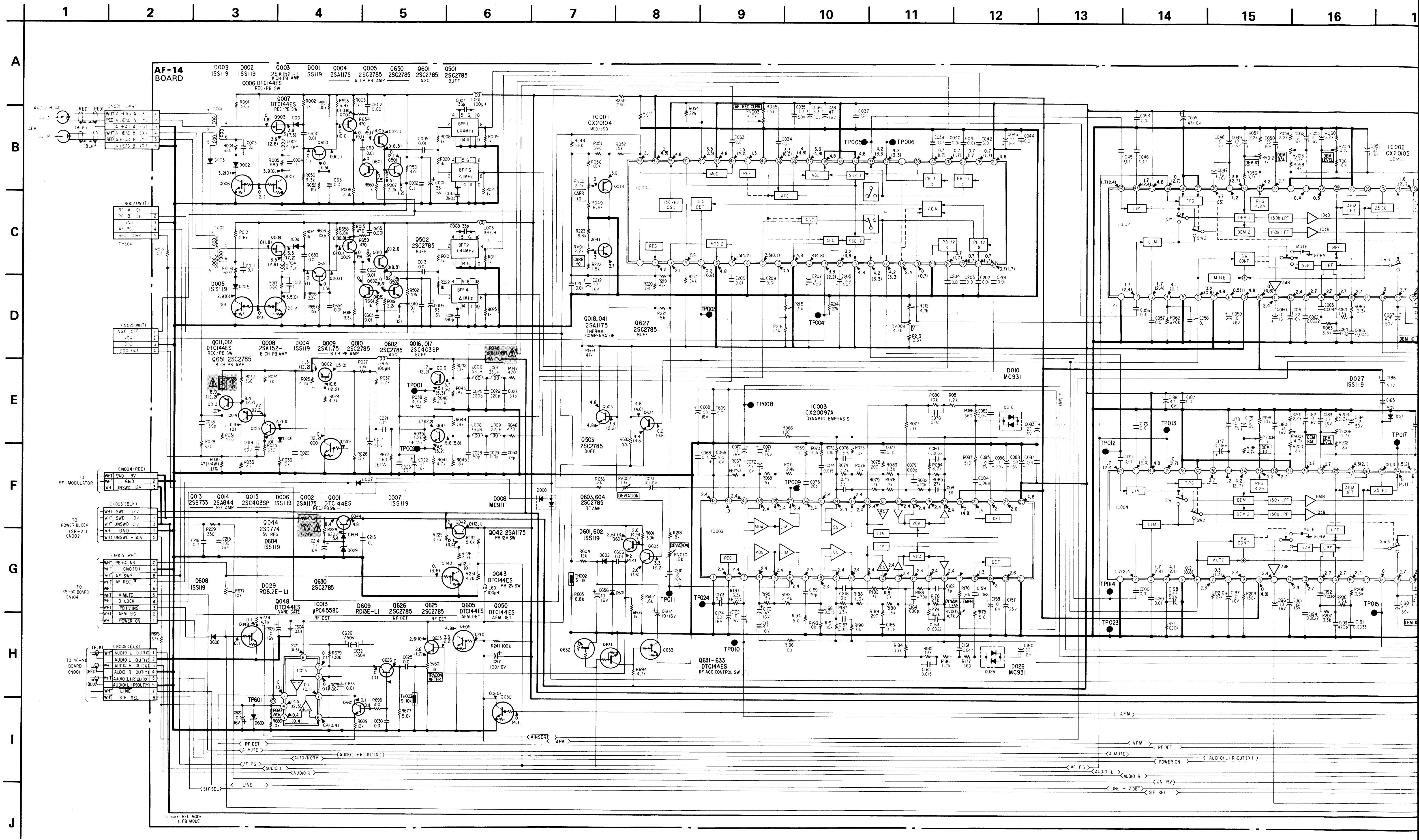
Note on Schematic Diagram:

- All resistors are in ohms, 1/6 W unless otherwise noted. kΩ: 1000 Ω, MΩ: 1000 kΩ
- All capacitors are in μF unless otherwise noted. p: μμF 50WV or less are not indicated except for electrolytics.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.
- The red lines show the main voltages.
- All voltages are dc measured with a VOM (10 MΩ).
- ▬ : B+ bus.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

AF-14 (AFM SIGNAL PROCESS), PJ-3 (AUDIO IN/OUT JACKS), FL-8 (INDICATOR), DH-4 (A/V HEAD AMP), PW-15 (POWER SWITCH, HEADPHONE LEVEL), DR-33 (SYSTEM CONTROL, SIGNAL TRANSLATION), MC-10 (MICROPHONE JACK), HP-18 (HEADPHON

– Ref. No. AF-14 BOARD: 3,000 series, PJ-3 BOARD: 9,500 series, FL-8 BOARD: 9,600 series, DH-4 BOARD: 7,000 series, PW-15 BOARD: 12,000 series, DR-33 BOARD: 9,300 series, MC-10 BOARD: 13,000 series, HP-18 BOARD: 9,800 series –

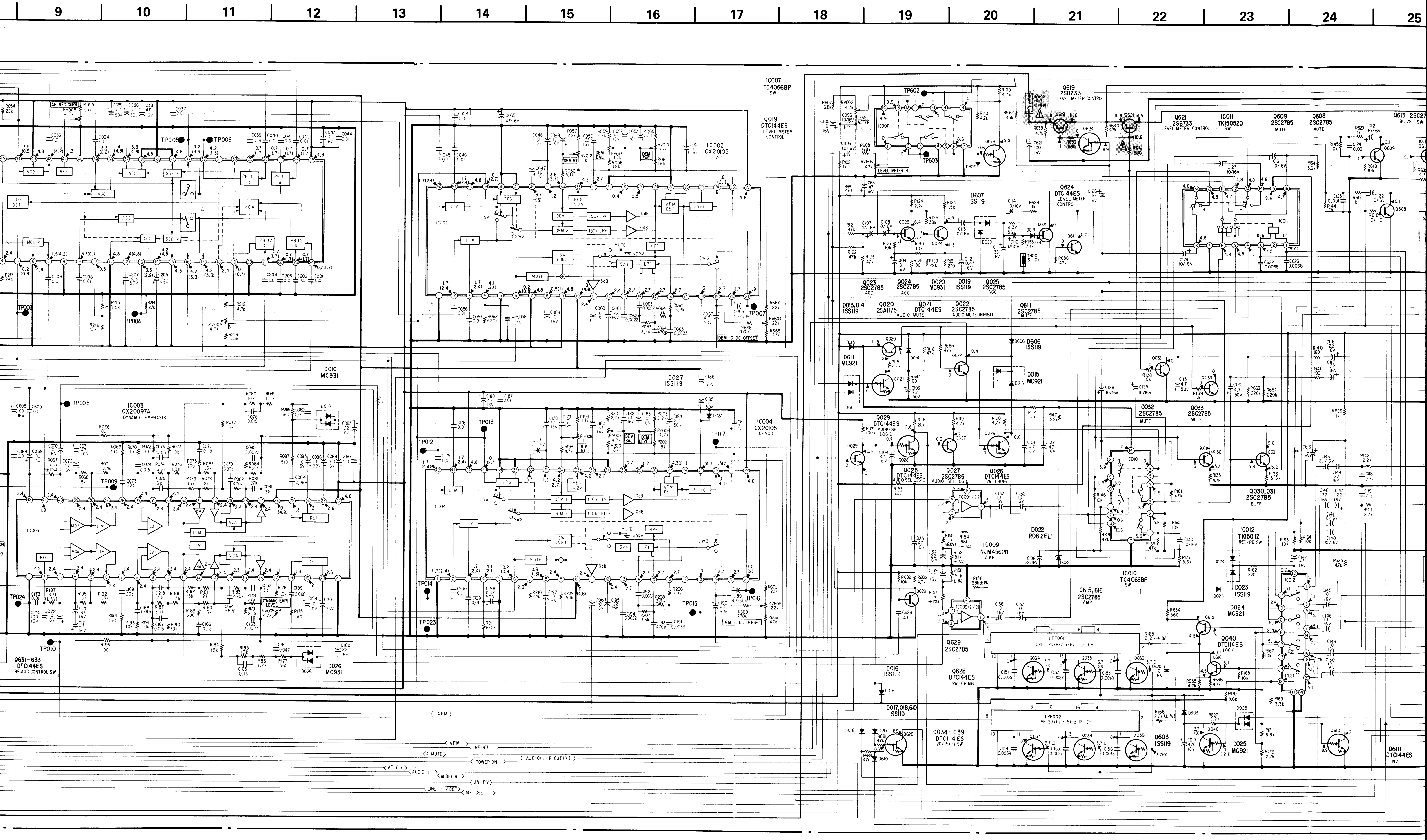


AF-14 BOARD
AUDIO HEAD
AFM
IC001 CX20104
IC002 CX20105
IC003 CX20097A DYNAMIC EMPHASIS
IC013 μPC4558C
BPF1 1.44MHz
BPF2 1.44MHz
BPF3 2.1MHz
BPF4 2.1MHz
Q018, 041 2SA1175 THERMAL COMPENSATOR
Q627 2SC2785 BUFF
Q503 2SC2785 BUFF
Q603, 604 2SC2785 RF AMP
D601, 602 1SS119
Q631-633 DTC144ES RF AGC CONTROL SW
D010 MC931
D026 MC931
D027 1SS119
Q044 2SD774 5V REG
D604 1SS119
Q042 2SA1175 PB 12V SW
Q043 DTC144ES PB 12V SW
Q630 2SC2785
D608 1SS119
D029 RD6.2E-L1
Q048 DTC144ES NAND GATE
D609 RD13E-L1
Q626 2SC2785 RF DET
Q625 2SC2785 RF DET
Q605 DTC144ES AFM DET
Q050 DTC144ES AFM DET
Q013 2SB733
Q014 2SA844 REC AMP
Q015 2SC403SP
D006 1SS119
Q002 2SA1175 REC/PB SW
Q001 DTC144ES
D007 1SS119
D008 MC911
Q011, 012 DTC144ES REC/PB SW
Q651 2SC2785 B CH PB AMP
Q008 2SK152-1 B CH PB AMP
D004 1SS119
Q009 2SA1175
Q010 2SC2785
Q602 2SC2785 AGC
Q016, 017 2SC403SP BUFF
Q502 2SC2785 BUFF
D005 1SS119
TO RF MODULATOR
TO POWER BLOCK (SR-21) CN002
TO SS-50 BOARD CN104
TO YC-40 BOARD CN001
CN004 (RED)
CN003 (BLK)
CN005 (WHT)
CN009 (BLK)
CN002 (WHT)
CN015 (WHT)
AUDIO L OUT(X)
AUDIO R OUT(X)
AUDIO(L+R)OUT(X)
LINE
SIF SEL
PB+A INS
A MUTE
D LOCK
PB+V INS
AFM SIG
POWER ON
TP001 TP002 TP003 TP004 TP005 TP006 TP008 TP009 TP010 TP011 TP012 TP013 TP014 TP015 TP017 TP023 TP024 TP601
MOD 1 MOD 2 REF AGC SSB 1 SSB 2 PB f1 PB f2 VCA LIM DEM 1 DEM 2 150k LPF 10dB HPF LPF S/H SW CONT MUTE NORM AFM DET 25 EC REG DEM BAL DEM LEVEL DEVIATION
RF DET
A MUTE
AUTO/NORM
AUDIO(L+R)OUT(X)
AF PG
AUDIO L
AUDIO R
LINE
AINSERT
AFM
POWER ON
UN RV
LINE + VDET
SIF SEL
no mark: REC MODE ( ): PB MODE

MC-Service

SWITCH, HEADPHONE LEVEL), DR-33 (SYSTEM CONTROL, SIGNAL TRANSLATION), MC-10 (MICROPHONE JACK), HP-18 (HEADPHONE JACK) SCHEMATIC DIAGRAMS

R-33 BOARD: 9,300 series, MC-10 BOARD: 13,000 series, HP-18 BOARD: 9,800 series –


9
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11
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16
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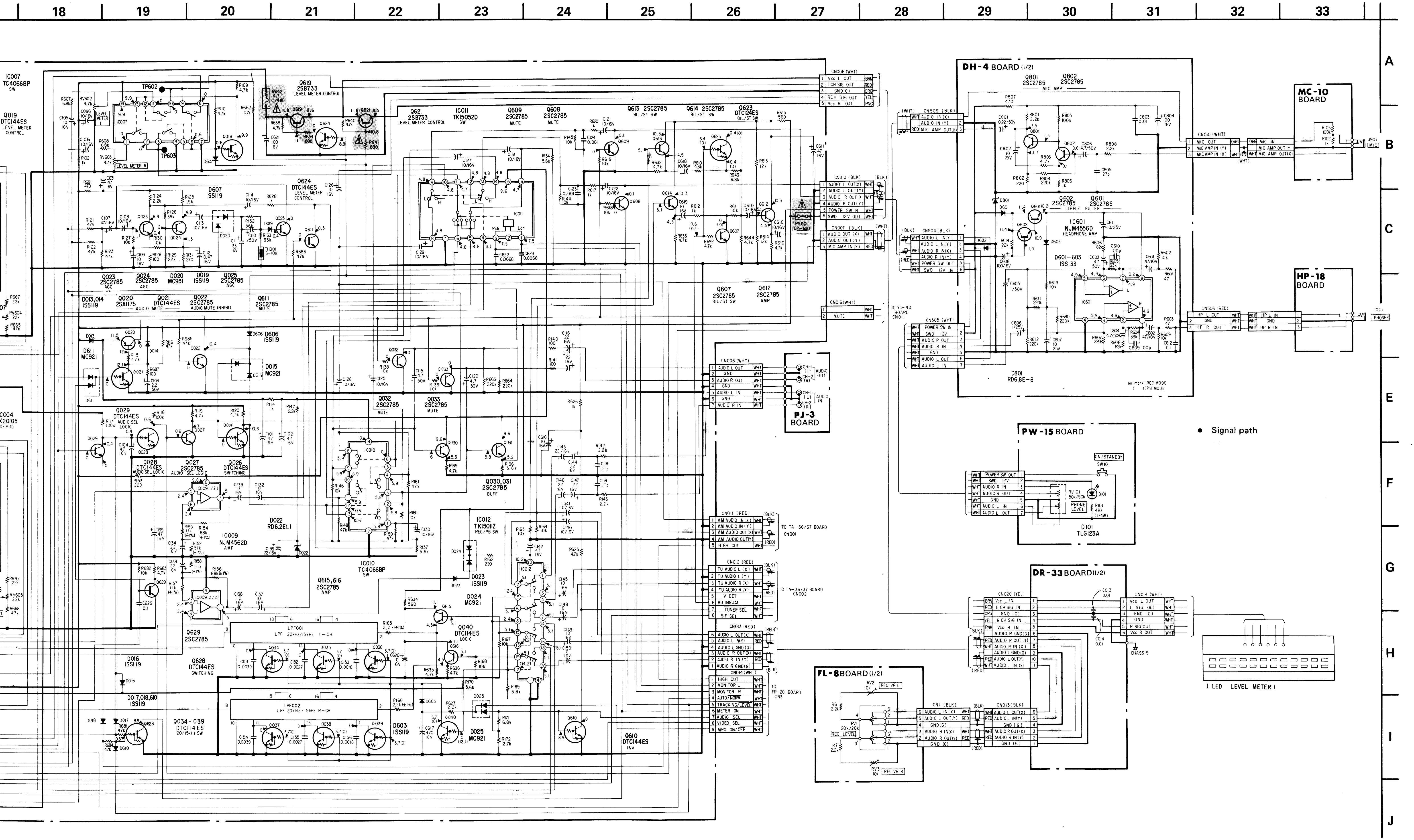
18
19
20
21
22
23
24
25
IC007 TC4066BP SW
Q019 DTC144ES LEVEL METER CONTROL
IC002 CX20105
IC003 CX20097A DYNAMIC EMPHASIS
IC004 CX20105 DEMOD
D010 MC931
D027 1SS119
D026 MC931
Q631-633 DTC144ES RF AGC CONTROL SW
Q619 2SB733 LEVEL METER CONTROL
Q621 2SB733 LEVEL METER CONTROL
IC011 TK15052D SW
Q609 2SC2785 MUTE
Q608 2SC2785 MUTE
Q613 2SC27 BIL/ST SW
Q624 DTC144ES LEVEL METER CONTROL
Q023 2SC2785 AGC
Q024 2SC2785 AGC
D020 MC931
D019 1SS119
Q025 2SC2785 AGC
D013,014 1SS119
Q020 2SA1175 AUDIO MUTE
Q021 DTC144ES
Q022 2SC2785 AUDIO MUTE INHIBIT
Q611 2SC2785 MUTE
D607 1SS119
D606 1SS119
D611 MC921
D015 MC921
Q032 2SC2785 MUTE
Q033 2SC2785 MUTE
Q029 DTC144ES AUDIO SEL LOGIC
Q028 DTC144ES AUDIO SEL LOGIC
Q027 2SC2785 AUDIO SEL LOGIC
Q026 DTC144ES SWITCHING
Q030,031 2SC2785 BUFF
IC009 NJM4562D AMP
D022 RD6.2EL1
IC010 TC4066BP SW
IC012 TK15011Z REC/PB SW
D023 1SS119
D024 MC921
Q615,616 2SC2785 AMP
Q040 DTC114ES LOGIC
Q629 2SC2785
Q628 DTC144ES SWITCHING
LPF001 LPF 20kHz/15kHz L-CH
LPF002 LPF 20kHz/15kHz R-CH
D016 1SS119
D017,018,610 1SS119
Q034-039 DTC114ES 20/15kHz SW
D603 1SS119
D025 MC921
Q610 DTC144ES INV
TP002
TP003
TP004
TP005
TP006
TP007
TP008
TP009
TP010
TP012
TP013
TP014
TP015
TP016
TP017
TP023
TP024
TP602
TP603
AFM
A MUTE
RF DET
POWER ON
AUDIO(L+R)OUT(X)
AF PG
AUDIO L
AUDIO R
UN RV
LINE + V DET
SIF SEL
DEM IC DC OFFSET
LEVEL METER R
AF REC CURR

MC-Service


18
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28
29
30
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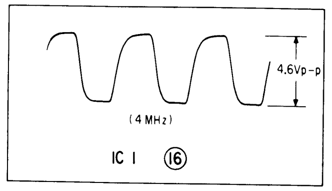
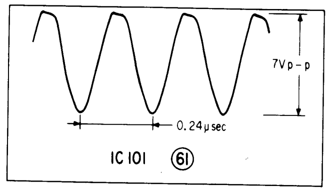
32
33
A
B
C
D
E
F
G
H
I
J
IC007 TC4066BP SW
Q019 DTC144ES LEVEL METER CONTROL
TP602
TP603
LEVEL METER L
LEVEL METER R
Q619 2SB733 LEVEL METER CONTROL
Q621 2SB733 LEVEL METER CONTROL
Q624
IC011 TK15052D SW
Q609 2SC2785 MUTE
Q608 2SC2785 MUTE
Q613 2SC2785 BIL/ST SW
Q614 2SC2785 BIL/ST SW
Q623 DTC124ES BIL/ST SW
Q624 DTC144ES LEVEL METER CONTROL
D607 1SS119
Q023 2SC2785 AGC
Q024 2SC2785 AGC
D020 MC931
D019 1SS119
Q025 2SC2785 AGC
D013,014 1SS119
Q020 2SA1175 AUDIO MUTE
Q021 DTC144ES AUDIO MUTE
Q022 2SC2785 AUDIO MUTE INHIBIT
Q611 2SC2785
Q607 2SC2785 BIL/ST SW
Q612 2SC2785 AMP
D611 MC921
D606 1SS119
D015 MC921
Q032 2SC2785 MUTE
Q033 2SC2785 MUTE
Q029 DTC144ES AUDIO SEL LOGIC
Q028 DTC144ES AUDIO SEL LOGIC
Q027 2SC2785 AUDIO SEL LOGIC
Q026 DTC144ES SWITCHING
IC010 TC4066BP SW
Q030,031 2SC2785 BUFF
IC012 TK15011Z REC/PB SW
D022 RD6.2EL1
IC009 NJM4562D AMP
D023 1SS119
D024 MC921
Q615,616 2SC2785 AMP
Q629 2SC2785
Q628 DTC144ES SWITCHING
Q040 DTC114ES LOGIC
LPF001 LPF 20kHz/15kHz L-CH
LPF002 LPF 20kHz/15kHz R-CH
D016 1SS119
D017,018,610 1SS119
Q034-039 DTC114ES 20/15kHz SW
D603 1SS119
D025 MC921
Q610 DTC144ES INV
PS001 ICP-N10
CN008 (WHT)
Vcc L OUT
LCH SIG OUT
GND(C)
RCH SIG OUT
Vcc R OUT
CN010 (BLK)
AUDIO L OUT(X)
AUDIO L OUT(Y)
AUDIO R OUT(X)
AUDIO R OUT(Y)
POWER SW IN
SWD 12V OUT
CN007 (BLK)
AUDIO OUT (X)
AUDIO OUT(Y)
MIC AMP IN(X)
CN016 (WHT)
MUTE
TO YC-40 BOARD CN011
CN006 (WHT)
AUDIO L OUT
GND
AUDIO R OUT
GND
AUDIO L IN
GND
AUDIO R IN
PJ-3 BOARD
CH-1 (L) AUDIO OUT
CH-2 (R)
CH-1 (L) AUDIO IN
CH-2 (R)
CN011 (RED)
AM AUDIO IN(X)
AM AUDIO IN(Y)
AM AUDIO OUT(X)
AM AUDIO OUT(Y)
HIGH CUT
TO TA-36/37 BOARD CN901
CN012 (RED)
TU AUDIO L(X)
TU AUDIO L(Y)
TU AUDIO R(X)
TU AUDIO R(Y)
V DET
BILINGUAL
TUNER SEL
SIF SEL
TO TA-36/37 BOARD CN002
CN013 (RED)
AUDIO L OUT(X)
AUDIO L IN(Y)
AUDIO L GND(G)
AUDIO R OUT(X)
AUDIO R IN(Y)
AUDIO R GND(G)
CN014 (WHT)
HIGH CUT
MONITOR L
MONITOR R
AUTO/NORM
TRACKING/LEVEL
METER ON
AUDIO SEL
VIDEO SEL
MPX ON/OFF
TO FR-20 BOARD CN3
DH-4 BOARD (1/2)
Q801 2SC2785
Q802 2SC2785
MIC AMP
CN509 (BLK)
AUDIO IN(X)
AUDIO IN(Y)
MIC AMP OUT(X)
CN510 (WHT)
MIC OUT
MIC AMP IN (Y)
MIC AMP IN (X)
MC-10 BOARD
CN2
MIC IN
MIC AMP OUT(Y)
MIC AMP OUT(X)
J901 (MIC)
Q602 2SC2785
Q601 2SC2785
RIPPLE FILTER
IC601 NJM4556D HEADPHONE AMP
D601-603 1SS133
CN504 (BLK)
AUDIO L IN(X)
AUDIO L IN(Y)
AUDIO R IN(X)
AUDIO R IN(Y)
POWER SW OUT
SWD 12V IN
CN505 (WHT)
POWER SW IN
SWD 12V
AUDIO R OUT
AUDIO R IN
GND
AUDIO L OUT
AUDIO L IN
D801 RD6.8E-B
no mark: REC MODE
( ): PB MODE
CN506 (RED)
HP L OUT
GND
HP R OUT
HP-18 BOARD
HP L IN
GND
HP R IN
J001 (PHONES)
• Signal path
PW-15 BOARD
POWER SW OUT
SWD 12V
AUDIO R IN
AUDIO R OUT
GND
AUDIO L IN
AUDIO L OUT
ON/STANDBY
SW101
RV101 50k/50k
PHONE LEVEL
D101
R101 470 (1/4W)
D101 TLG123A
DR-33 BOARD (1/2)
CN020 (YEL)
Vcc L IN
L CH SIG IN
GND (C)
R CH SIG IN
Vcc R IN
AUDIO R GND(G)
AUDIO R OUT(Y)
AUDIO R IN(X)
AUDIO L GND(G)
AUDIO L OUT(Y)
AUDIO L IN (X)
CN014 (WHT)
Vcc L OUT
L SIG OUT
GND (C)
GND
R SIG OUT
Vcc R OUT
CHASSIS
(LED LEVEL METER)
FL-8 BOARD (1/2)
RV2 10k REC VR L
RV1 20k/20k REC LEVEL
RV3 10k REC VR R
CN1 (BLK)
AUDIO L IN(X)
AUDIO L OUT(Y)
GND(G)
AUDIO R IN(X)
AUDIO R OUT(Y)
GND (G)
CN013 (BLK)
AUDIO L OUT(X)
AUDIO L IN(Y)
GND (G)
AUDIO R OUT(X)
AUDIO R IN(Y)
GND (G)

FR-20 BOARD



FL-9 BOARD



1-7. FL-8 (INDICATOR), FL-9 (TIMER CONTROL), FR-20 (FUNCTION SWITCH) PRINTED WIRING

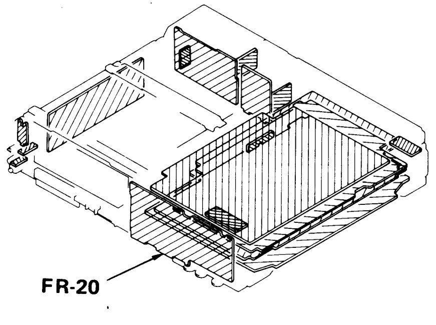
– Ref. No. FL-8 BOARD: 9,600 series, FL-9 BOARD: 9,700 series, FR-20 BOARD: 9,800 series –

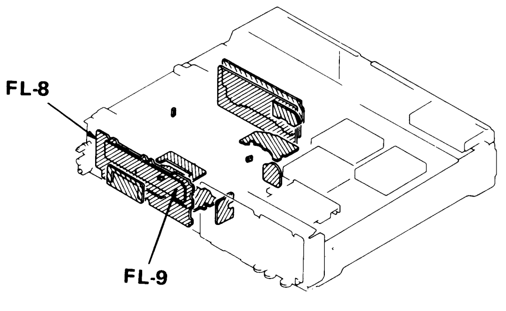
1 2 3 4 5 6

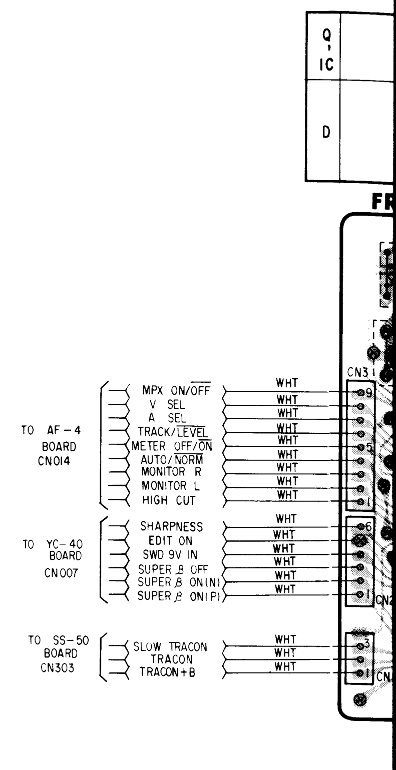
A B C D E F G H I J

- ○— : Indicates a leadwire mounted on the component side.
- ●— : Indicates a leadwire mounted on the printed side.
- ⊗ : through hole
- ▨ : soldering side.
- ▨ : B+ pattern
- ▨ : component side.
- Digital transistor (FR-20: Q104. FL-9: Q102, 103) transistors with resistors.
  Refer to the FR-20 and FL-9 boards schematic diagrams.

When indicating parts by reference number, please include the board name.



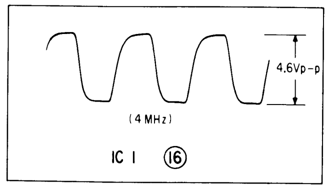



Q
IC
D
FR
CN3
TO AF-4 BOARD CN014
MPX ON/OFF
V SEL
A SEL
TRACK/LEVEL
METER OFF/ON
AUTO/NORM
MONITOR R
MONITOR L
HIGH CUT
TO YC-40 BOARD CN007
SHARPNESS
EDIT ON
SWD 9V IN
SUPER β OFF
SUPER β ON(N)
SUPER β ON(P)
TO SS-50 BOARD CN303
SLOW TRACON
TRACON
TRACON+B
WHT
9
5
1
6
1
CN2
3
1
CN

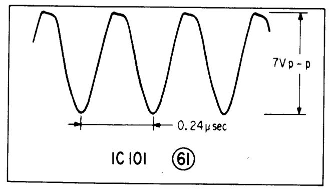
1-7. FL-8 (INDICATOR), FL-9 (TIMER CONTROL), FR-20 (FUNCTION SWITCH) PRINTED WIRING BOARDS

– Ref. No. FL-8 BOARD: 9,600 series, FL-9 BOARD: 9,700 series, FR-20 BOARD: 9,800 series –

FR-20 BOARD



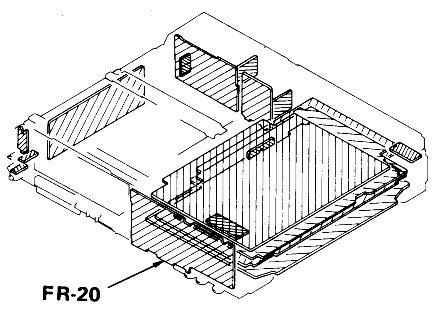
FL-9 BOARD

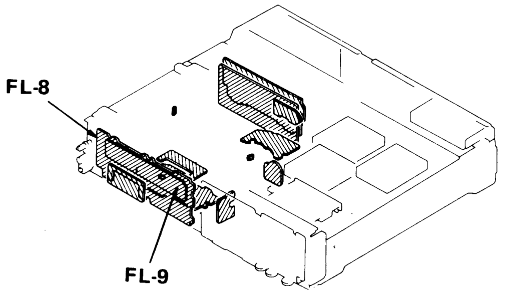


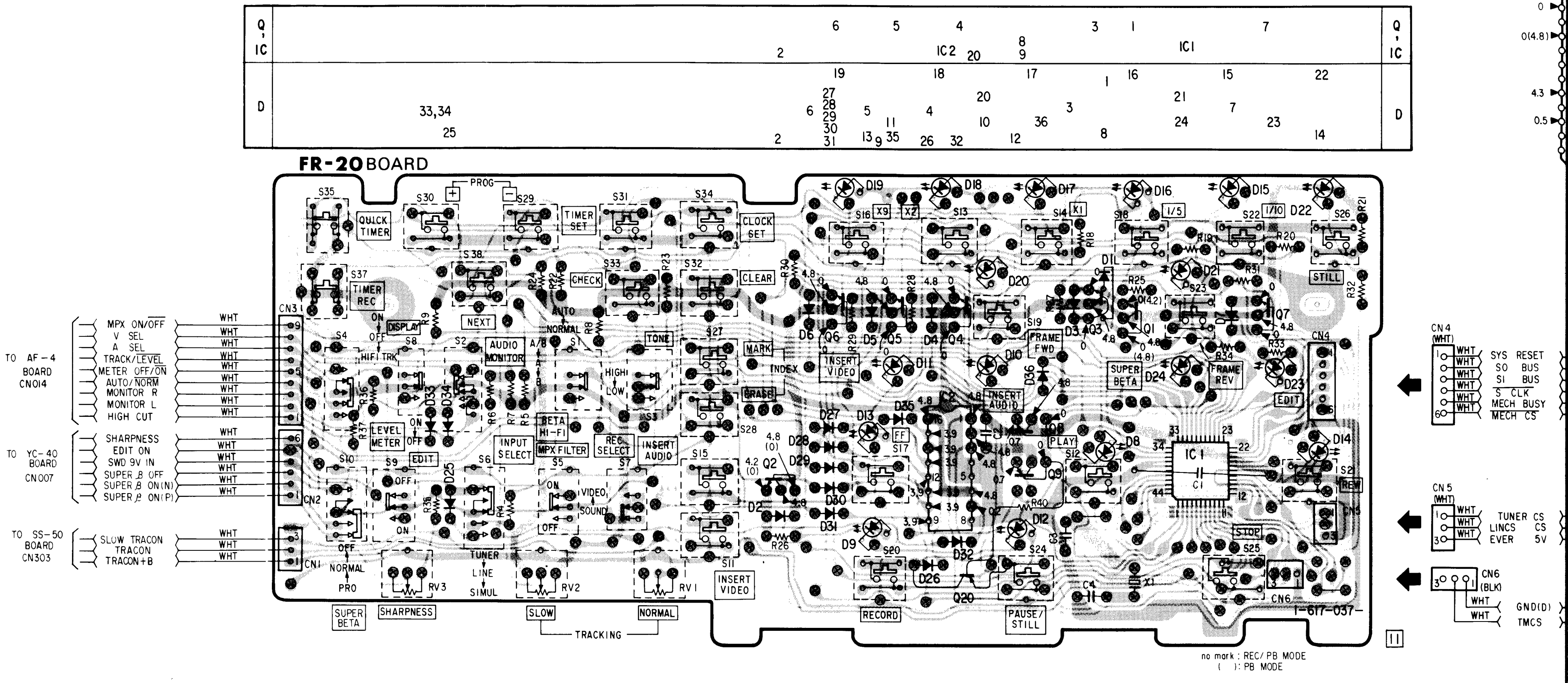
- ○— : Indicates a leadwire mounted on the component side.
- ●— : Indicates a leadwire mounted on the printed side.
- ⊗ : through hole
- ▨ : soldering side.
- ▨ : B+ pattern
- ▨ : component side.
- Digital transistor (FR-20: Q104. FL-9: Q102, 103) transistors with resistors.

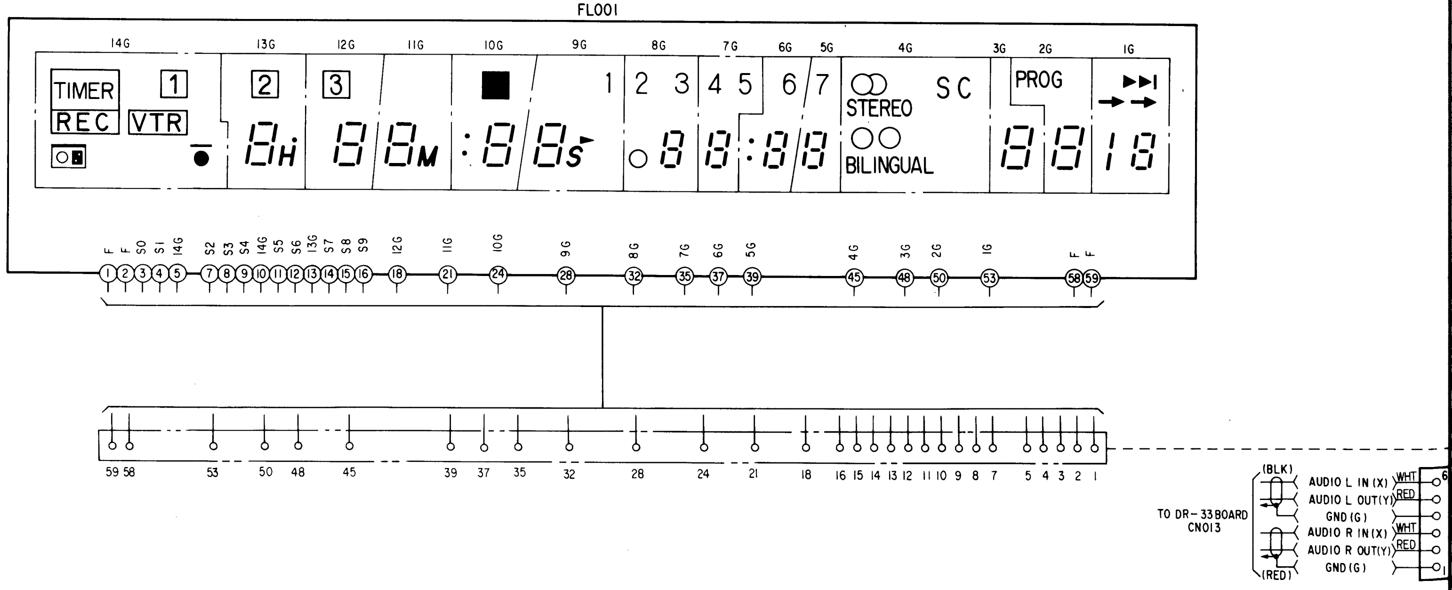
Refer to the FR-20 and FL-9 boards schematic diagrams.

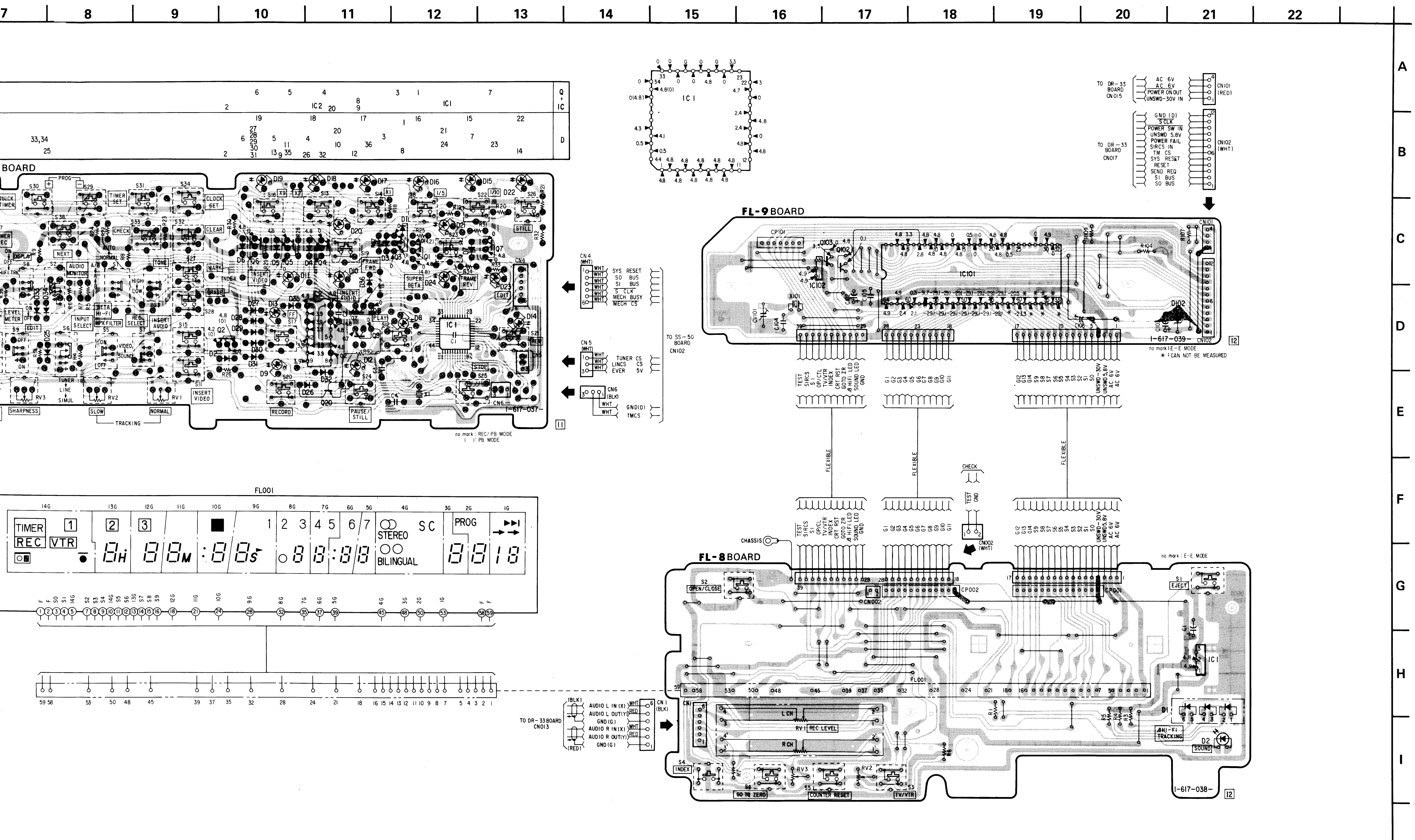
When indicating parts by reference number, please include the board name.





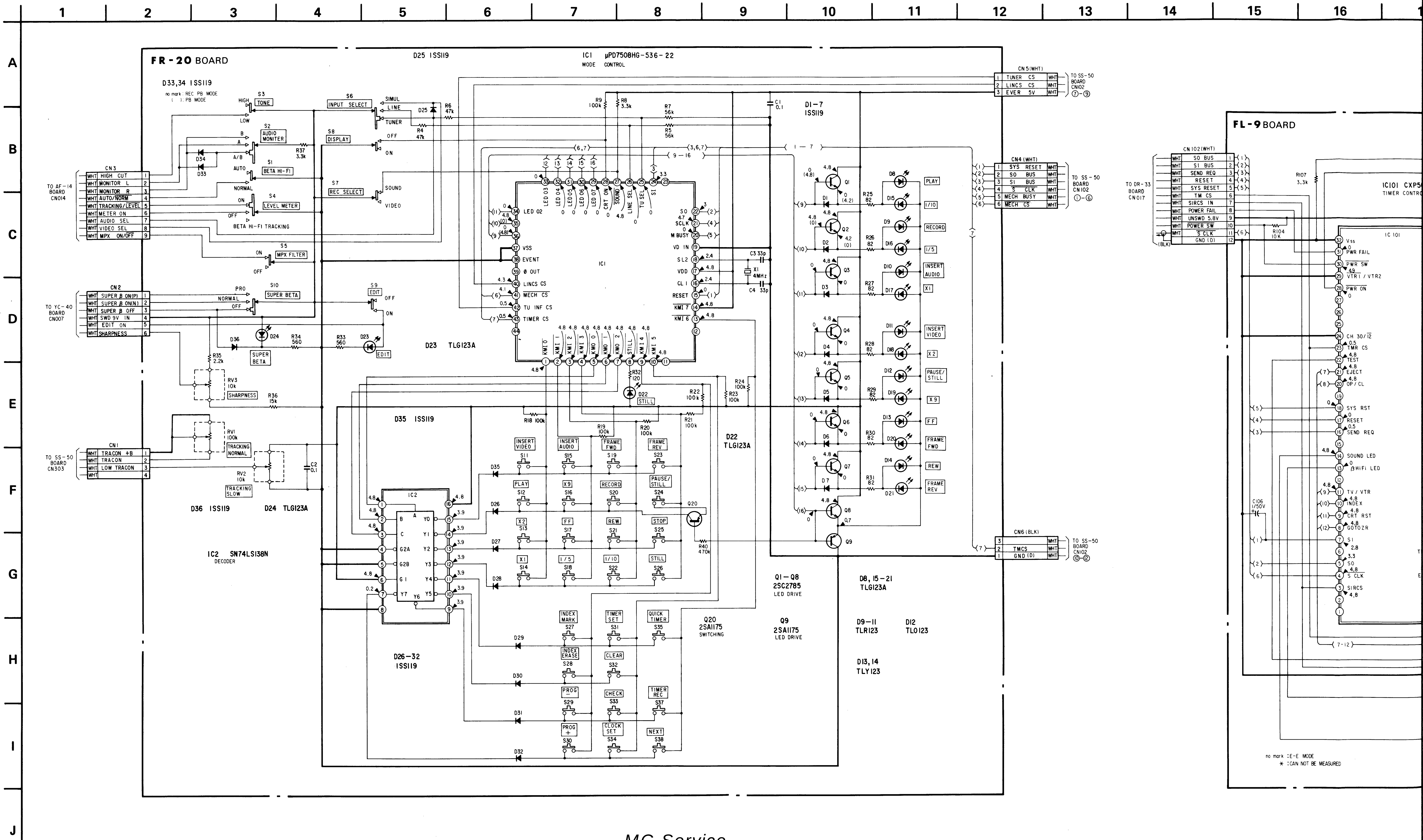

Q IC
D
FR-20 BOARD
IC1
IC2
S35 QUICK TIMER
S30 PROG
S29 TIMER SET
S31
S34 CLOCK SET
S37 TIMER REC
S38
S33 CHECK
S32 CLEAR
DISPLAY
NEXT
AUDIO MONITOR
TONE
MARK
ERASE
INDEX
INSERT VIDEO
INSERT AUDIO
FRAME FWD
FRAME REV
SUPER BETA
STILL
EDIT
PLAY
FF
REW
LEVEL METER
HIFI TRK
BETA HI-FI
MPX FILTER
INPUT SELECT
REC SELECT
INSERT AUDIO
HIGH LOW
VIDEO SOUND
ON OFF
TUNER LINE SIMUL
NORMAL PRO
RV1 RV2 RV3
SUPER BETA
SHARPNESS
SLOW
NORMAL
TRACKING
INSERT VIDEO
RECORD
PAUSE/STILL
S16 X9
S13
S14 X1
S18 1/5
S22 1/10
S26
D15 D16 D17 D18 D19 D22 D23 D24
CN1 CN2 CN3 CN4 CN5 CN6
1-617-037-
TO AF-4 BOARD CN014
MPX ON/OFF
V SEL
A SEL
TRACK/LEVEL
METER OFF/ON
AUTO/NORM
MONITOR R
MONITOR L
HIGH CUT
TO YC-40 BOARD CN007
SHARPNESS
EDIT ON
SWD 9V IN
SUPER β OFF
SUPER β ON(N)
SUPER β ON(P)
TO SS-50 BOARD CN303
SLOW TRACON
TRACON
TRACON+B
WHT
CN4 (WHT)
SYS RESET
SO BUS
SI BUS
S CLK
MECH BUSY
MECH CS
CN5 (WHT)
TUNER CS
LINCS CS
EVER 5V
CN6 (BLK)
GND(D)
TMCS
11
no mark : REC/PB MODE
( ) : PB MODE


FL001
14G 13G 12G 11G 10G 9G 8G 7G 6G 5G 4G 3G 2G 1G
TIMER
REC
VTR
PROG
STEREO
BILINGUAL
SC
59 58 53 50 48 45 39 37 35 32 28 24 21 18 16 15 14 13 12 11 10 9 8 7 5 4 3 2 1
TO DR-33 BOARD CN013
(BLK)
AUDIO L IN (X)
AUDIO L OUT(Y)
GND (G)
AUDIO R IN (X)
AUDIO R OUT(Y)
GND (G)
(RED)
WHT
RED

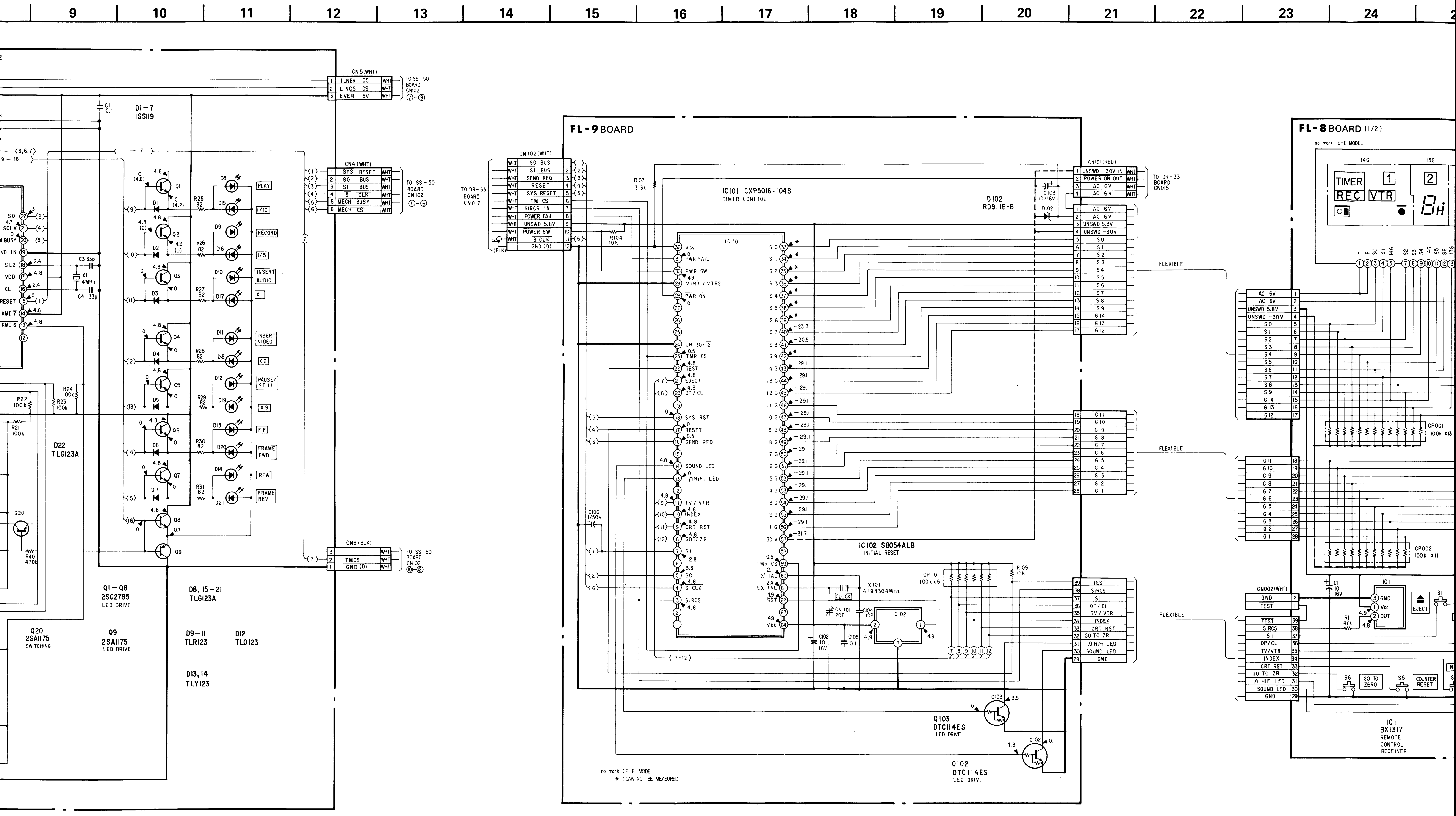

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
A B C D E F G H I J
BOARD
IC1
FL-9 BOARD
FL-8 BOARD
FL001
TIMER REC VTR
STEREO BILINGUAL
PROG
SC
CN4 (WHT)
SYS RESET
SO BUS
SI BUS
S CLK
MECH BUSY
MECH CS
CN5 (WHT)
TUNER CS
LINCS CS
EVER 5V
CN6 (BLK)
GND(D)
TMCS
TO SS-50 BOARD CN102
TO DR-33 BOARD CN015
AC 6V
AC 6V
POWER ON/OUT
UNSWD-30V IN
CN101 (RED)
TO DR-33 BOARD CN017
GND (D)
S CLK
POWER SW IN
UNSWD 5.8V
POWER FAIL
SIRCS IN
TM CS
SYS RESET
RESET
SEND REQ
SI BUS
SO BUS
CN102 (WHT)
TO DR-33 BOARD CN013
AUDIO L IN (X)
AUDIO L OUT(Y)
GND (G)
AUDIO R IN (X)
AUDIO R OUT(Y)
GND (G)
CN1 (BLK)
FLEXIBLE
CHECK
TEST
GND
CN002 (WHT)
CHASSIS
OPEN/CLOSE
EJECT
INDEX
GO TO ZERO
COUNTER RESET
TV/VTR
REC LEVEL
L CH
R CH
HI-FI TRACKING
SOUND
SHARPNESS
SLOW
NORMAL
TRACKING
RECORD
PAUSE/STILL
STOP
1-617-037-
1-617-039-
1-617-038-
no mark : REC/PB MODE
( ) : PB MODE
no mark : E-E MODE
* : CAN NOT BE MEASURED

FL-8 (INDICATOR), FL-9 (TIMER CONTROL), FR-20 (FUNCTION SWITCH) SCHEMATIC DIAGRAMS

– Ref. No. FL-8 BOARD: 9,600 series, FL-9 BOARD: 9,700 series, FR-20 BOARD: 9,800 series –


FR-20 BOARD
FL-9 BOARD
IC1 μPD7508HG-536-22 MODE CONTROL
IC2 SN74LS138N DECODER
IC101 CXP5 TIMER CONTRO
D25 1SS119
D33,34 1SS119
no mark : REC PB MODE
( ) : PB MODE
D1-7 1SS119
D35 1SS119
D36 1SS119
D24 TLG123A
D23 TLG123A
D22 TLG123A
D26-32 1SS119
Q1-Q8 2SC2785 LED DRIVE
Q9 2SA1175 LED DRIVE
Q20 2SA1175 SWITCHING
D8, 15-21 TLG123A
D9-11 TLR123
D12 TLO123
D13, 14 TLY123
S3 TONE
S2 AUDIO MONITER
S1 BETA HI-FI
S4 LEVEL METER
S5 MPX FILTER
S6 INPUT SELECT
S8 DISPLAY
S7 REC SELECT
S9 EDIT
S10 SUPER BETA
SIMUL
LINE
TUNER
SOUND
VIDEO
BETA HI-FI TRACKING
CN3
HIGH CUT
MONITOR L
MONITOR R
AUTO/NORM
TRACKING/LEVEL
METER ON
AUDIO SEL
VIDEO SEL
MPX ON/OFF
TO AF-14 BOARD CN014
CN2
SUPER β ON(P)
SUPER β ON(N)
SUPER β OFF
SWD 9V IN
EDIT ON
SHARPNESS
TO YC-40 BOARD CN007
CN1
TRACON +B
TRACON
LOW TRACON
TO SS-50 BOARD CN303
RV3 10k SHARPNESS
RV1 100k TRACKING NORMAL
RV2 10k TRACKING SLOW
SUPER BETA
EDIT
CN5(WHT)
TUNER CS
LINCS CS
EVER 5V
TO SS-50 BOARD CN102 ⑦-⑨
CN4(WHT)
SYS RESET
SO BUS
SI BUS
S CLK
MECH BUSY
MECH CS
TO SS-50 BOARD CN102 ①-⑥
CN6(BLK)
TMCS
GND (D)
TO SS-50 BOARD CN102 ⑩-⑫
X1 4MHz
PLAY
I/10
RECORD
I/5
INSERT AUDIO
X1
INSERT VIDEO
X2
PAUSE/STILL
X9
FF
FRAME FWD
REW
FRAME REV
INSERT VIDEO S11
INSERT AUDIO S15
FRAME FWD S19
FRAME REV S23
PLAY S12
X9 S16
RECORD S20
PAUSE/STILL S24
X2 S13
FF S17
REW S21
STOP S25
X1 S14
I/5 S18
I/10 S22
STILL S26
INDEX MARK S27
TIMER SET S31
QUICK TIMER S35
INDEX ERASE S28
CLEAR S32
PROG – S29
CHECK S33
TIMER REC S37
PROG + S30
CLOCK SET S34
NEXT S38
CN102(WHT)
SO BUS
SI BUS
SEND REQ
RESET
SYS RESET
TM CS
SIRCS IN
POWER FAIL
UNSWD 5.8V
POWER SW
S CLK
GND (D)
TO DR-33 BOARD CN017
R107 3.3k
R104 10k
C106 1/50V
Vss
PWR FAIL
PWR SW
VTR1 / VTR2
PWR ON
CH 30/12
TMR CS
TEST
EJECT
OP / CL
SYS RST
RESET
SEND REQ
SOUND LED
βHiFi LED
TV / VTR
INDEX
CRT RST
GOTOZR
SI
SO
S CLK
SIRCS
no mark : E-E MODE
* : CAN NOT BE MEASURED

MC-Service



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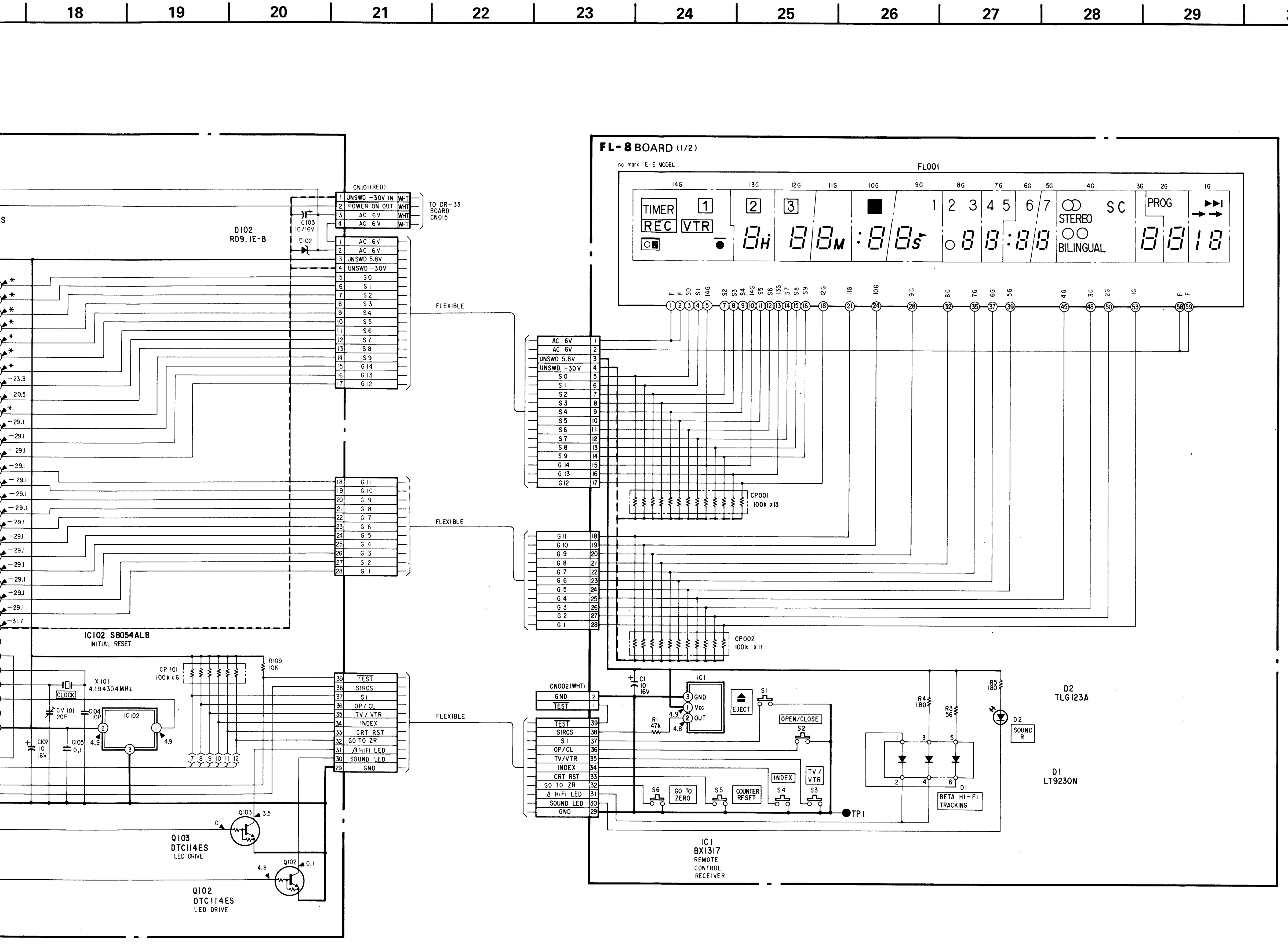
22
23
24
CN5(WHT)
TUNER CS
LINCS CS
EVER 5V
TO SS-50 BOARD CN102 ⑦-⑨
CN4(WHT)
SYS RESET
SO BUS
SI BUS
S CLK
MECH BUSY
MECH CS
TO SS-50 BOARD CN102 ①-⑥
CN6(BLK)
TMCS
GND(D)
TO SS-50 BOARD CN102 ⑩-⑫
C1 0.1
D1-7 1SS119
X1 4MHz
C3 33p
C4 33p
PLAY
1/10
RECORD
1/5
INSERT AUDIO
X1
INSERT VIDEO
X2
PAUSE/ STILL
X9
FF
FRAME FWD
REW
FRAME REV
D22 TLG123A
Q1-Q8 2SC2785 LED DRIVE
Q9 2SA1175 LED DRIVE
Q20 2SA1175 SWITCHING
D8, 15-21 TLG123A
D9-11 TLR123
D12 TLO123
D13, 14 TLY123
FL-9 BOARD
CN102(WHT)
SO BUS
SI BUS
SEND REQ
RESET
SYS RESET
TM CS
SIRCS IN
POWER FAIL
UNSWD 5.8V
POWER SW
S CLK
GND(D)
TO DR-33 BOARD CN017
IC101 CXP5016-104S TIMER CONTROL
R107 3.3k
R104 10K
D102 RD9.1E-B
C103 10/16V
CN101(RED)
UNSWD -30V IN
POWER ON OUT
AC 6V
AC 6V
TO DR-33 BOARD CN015
C106 1/50V
IC102 S8054ALB INITIAL RESET
X101 4.194304MHz
CP101 100k x 6
R109 10K
CV101 20P
C104 10P
C102 10 16V
C105 0.1
Q103 DTC114ES LED DRIVE
Q102 DTC114ES LED DRIVE
no mark : E-E MODE
* : CAN NOT BE MEASURED
FLEXIBLE
FLEXIBLE
FLEXIBLE
FL-8 BOARD (1/2)
no mark : E-E MODEL
TIMER
REC
VTR
CP001 100k x13
CP002 100k x11
CN002(WHT)
IC1 BX1317 REMOTE CONTROL RECEIVER
EJECT
GO TO ZERO
COUNTER RESET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21
22
23
24
25
26
27
28
29
30
CN101(RED)
UNSWD -30V IN
POWER ON OUT
AC 6V
AC 6V
WHT
TO DR-33 BOARD CN015
D102 RD9.1E-B
C103 10/16V
D102
UNSWD 5.8V
UNSWD -30V
S0
S1
S2
S3
S4
S5
S6
S7
S8
S9
G14
G13
G12
G11
G10
G9
G8
G7
G6
G5
G4
G3
G2
G1
FLEXIBLE
-23.3
-20.5
-29.1
-31.7
IC102 S8054ALB
INITIAL RESET
CP101 100k x 6
R109 10K
X101 4.194304MHz
CLOCK
CV101 20P
C104 10P
C102 10 16V
C105 0.1
IC102
4.9
TEST
SIRCS
S1
OP/CL
TV/VTR
INDEX
CRT RST
GO TO ZR
β HiFi LED
SOUND LED
GND
Q103 DTC114ES LED DRIVE
Q102 DTC114ES LED DRIVE
3.5
4.8
0.1
FL-8 BOARD (1/2)
no mark : E-E MODEL
FL001
14G
13G
12G
11G
10G
9G
8G
7G
6G
5G
4G
3G
2G
1G
TIMER
REC
VTR
STEREO
BILINGUAL
SC
PROG
CP001 100k x13
CP002 100k x11
CN002(WHT)
C1 10 16V
IC1
GND
Vcc
OUT
R1 47k
EJECT
S1
OPEN/CLOSE
S2
INDEX
TV/VTR
S6
GO TO ZERO
S5
COUNTER RESET
S4
S3
TP1
R4 180
R3 56
R5 180
D2 TLG123A
D2 SOUND R
D1 LT9230N
D1 BETA HI-FI TRACKING
IC1 BX1317 REMOTE CONTROL RECEIVER
31
32
33
A
B
C
D
E
F
G
H
I
J

- All resistors are in ohms, 1/6 W unless otherwise noted. kΩ: 1000 Ω, MΩ: 1000 kΩ
- All capacitors are in μF unless otherwise noted. p: μμF 50WV or less are not indicated except for electrolytics.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.
- The red lines show the main voltages.
- All voltages are dc measured with a VOM (10 MΩ).
- ━━━ : B+ bus.
- ▬▬▬ : B– bus.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

1-8. TA-36 (TUNER, AUDIO) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

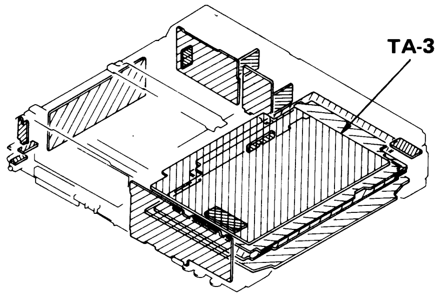
– Ref. No. TA-36 BOARD: 4,000 series –

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

A B C D E F G H I J

Note on Printed Wiring Board:

- ○—— : Indicates a leadwire mounted on the component side.
- ●—— : Indicates a leadwire mounted on the printed side.
- ▒ : soldering side.
- ░ : B+ pattern
- ▓
- Digital transistor (TA-36: Q003, 004, 006, 013, 014, 015, 301, 508, 601, 604, 605, 610, 703, 800, 802, 901) transistors with resistors.
  Refer to the TA-36 borad schematic diagram for digital transistor.



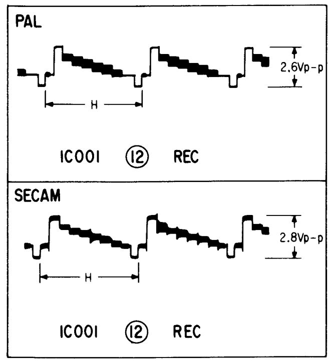
Note on Schematic Diagram:

- All resistors are in ohms, $^1/_6$W unless otherwise noted. kΩ: 1000 Ω, MΩ: 1000 kΩ
- All capacitors are in μF unless otherwise noted. p: μμF 50WV or less are not indicated except for electrolytics.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- —▭— : nonflammable resistor.
- —∿— : fusible resistor.
- The red lines show the main voltages.
- All voltages are dc measured with a VOM (10 MΩ).
- ▬▬ : B+ bus.
- ▬ ▬ ▬ : B– bus.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

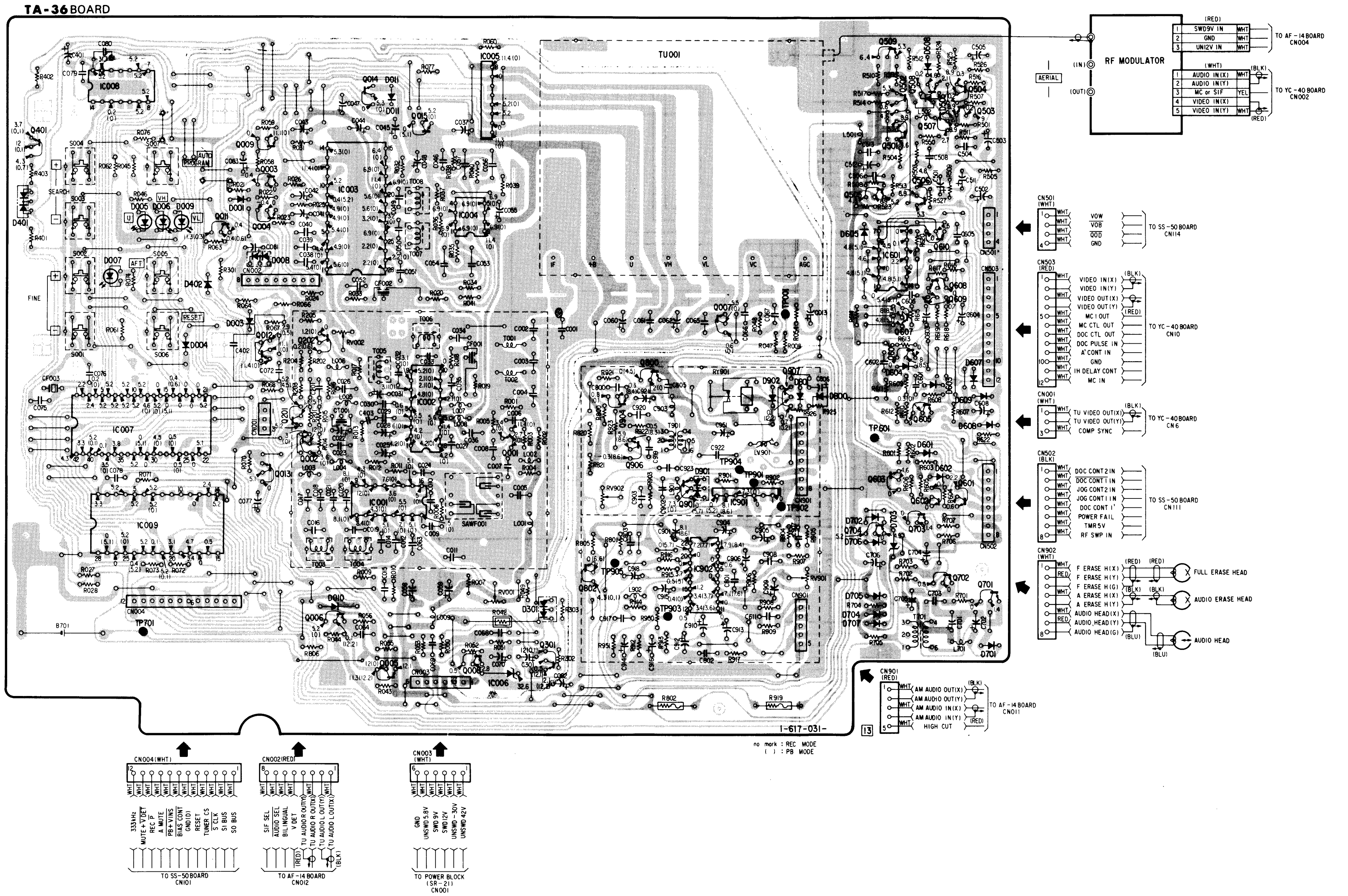
TA-36 BOARD

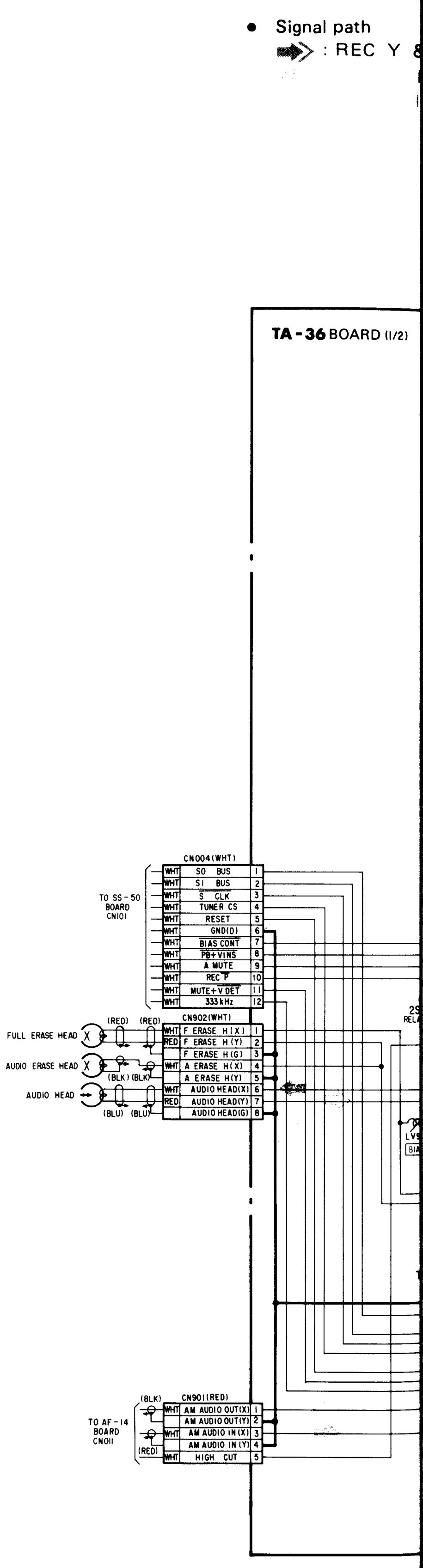


<ES Model>

Q·IC	401 IC008 IC007 IC009 011 009,003 004 012 013 201,002 202 006 IC003 014 IC001 005 015 IC002 IC004 IC005 008 001 IC006 301 802 904 906 800 901 IC902 007 IC901 907 509 505 501,502 IC601 607,606 603 704 508 506 605 703 507 610 608,609 504 503 602 702 601 701
D	401 007 005 006 004 009 402 001 003 008 010 011 301 901 902 801 800 605 702,706,703 705,704,707 508 505 604,603 601,602 505 607 609,608 701
ADJ	RV002 RV001 RV902 LV901 RV901
TP	701 905 903 904 901 001 902 601

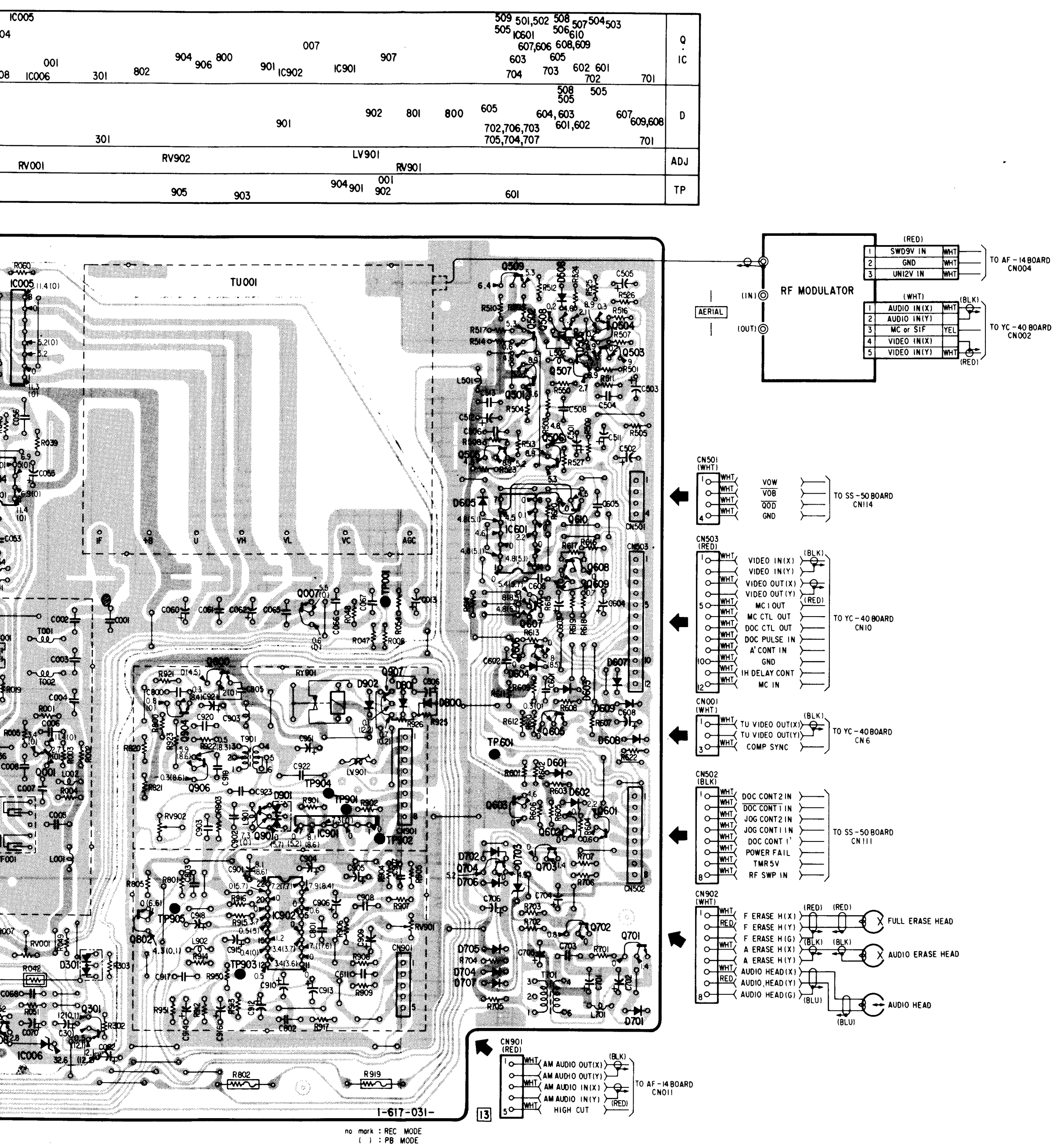
TA-36 BOARD

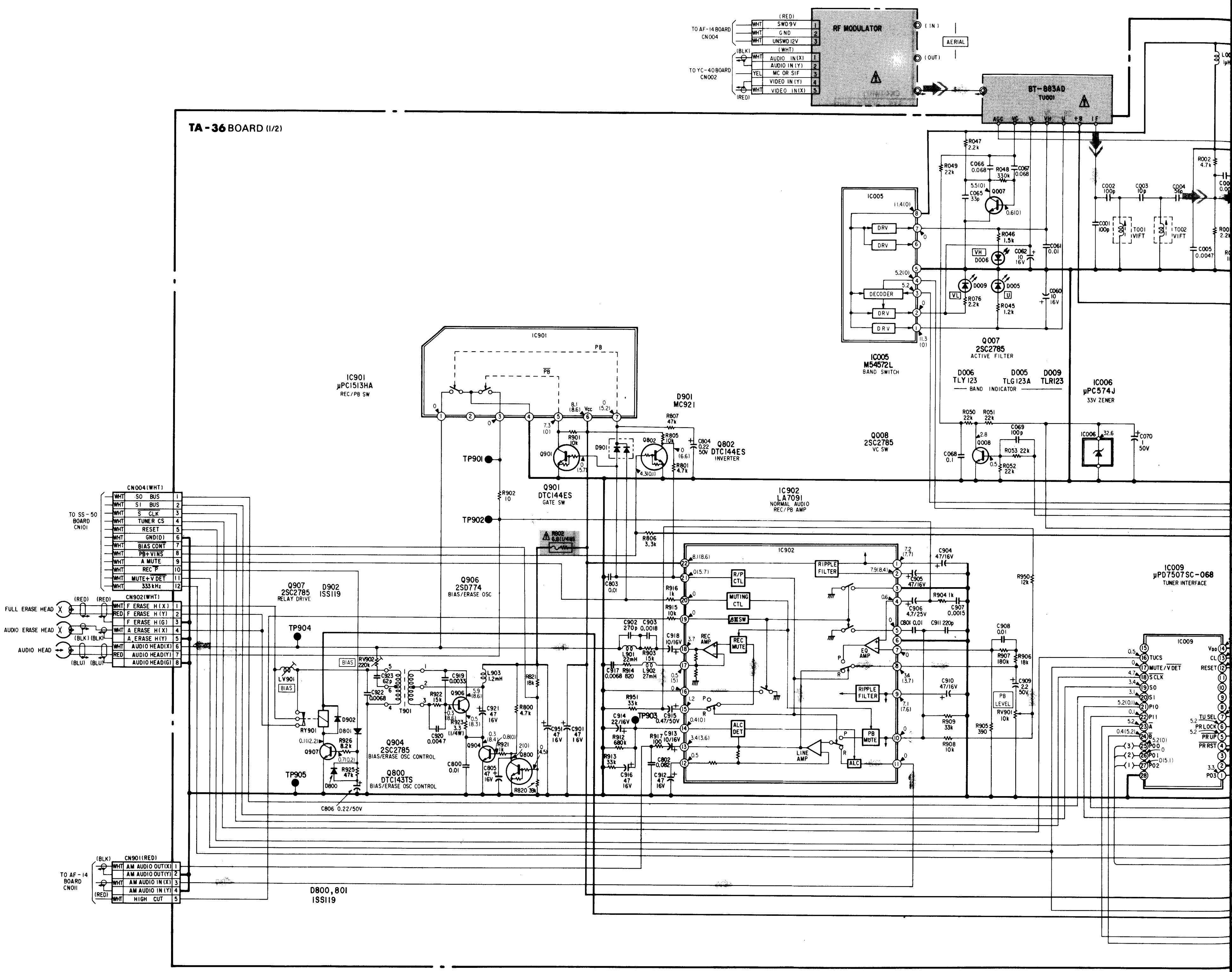

TU001
RF MODULATOR
AERIAL
(IN)
(OUT)
(RED)
1 SWD9V IN WHT
2 GND WHT
3 UNI2V IN WHT
TO AF-14 BOARD CN004
(WHT)
1 AUDIO IN(X) WHT
2 AUDIO IN(Y)
3 MC or SIF YEL
4 VIDEO IN(X)
5 VIDEO IN(Y) WHT
(BLK)
(RED)
TO YC-40 BOARD CN002
CN501 (WHT)
VOW
VOB
QOD
GND
TO SS-50 BOARD CN114
CN503 (RED)
VIDEO IN(X)
VIDEO IN(Y)
VIDEO OUT(X)
VIDEO OUT(Y)
MC I OUT
MC CTL OUT
DOC CTL OUT
DOC PULSE IN
A' CONT IN
GND
IH DELAY CONT
MC IN
TO YC-40 BOARD CN10
CN001 (WHT)
TU VIDEO OUT(X)
TU VIDEO OUT(Y)
COMP SYNC
TO YC-40 BOARD CN6
CN502 (BLK)
DOC CONT 2 IN
DOC CONT I IN
JOG CONT 2 IN
JOG CONT I IN
DOC CONT I'
POWER FAIL
TMR5V
RF SWP IN
TO SS-50 BOARD CN111
CN902 (WHT)
F ERASE H(X)
F ERASE H(Y)
F ERASE H(G)
A ERASE H(X)
A ERASE H(Y)
AUDIO HEAD(X)
AUDIO HEAD(Y)
AUDIO HEAD(G)
FULL ERASE HEAD
AUDIO ERASE HEAD
AUDIO HEAD
CN901 (RED)
AM AUDIO OUT(X)
AM AUDIO OUT(Y)
AM AUDIO IN(X)
AM AUDIO IN(Y)
HIGH CUT
TO AF-14 BOARD CN011
1-617-031-
13
no mark : REC MODE
( ) : PB MODE
CN004 (WHT)
333kHz
MUTE+V DET
REC P
A MUTE
PB+VINS
BIAS CONT
GND(D)
RESET
TUNER CS
S CLK
SI BUS
SO BUS
TO SS-50 BOARD CN101
CN002 (RED)
SIF SEL
AUDIO SEL
BILINGUAL
V DET
TU AUDIO R OUT(Y)
TU AUDIO R OUT(X)
TU AUDIO L OUT(Y)
TU AUDIO L OUT(X)
TO AF-14 BOARD CN012
CN003 (WHT)
GND
UNSWD 5.8V
SWD 9V
SWD12V
UNSWD -30V
UNSWD 42V
TO POWER BLOCK (SR-21) CN001


Signal path
➡ : REC Y
TA-36 BOARD (1/2)
CN004 (WHT)
1 SO BUS
2 SI BUS
3 S CLK
4 TUNER CS
5 RESET
6 GND(D)
7 BIAS CONT
8 PB+VINS
9 A MUTE
10 REC P
11 MUTE+V DET
12 333kHz
TO SS-50 BOARD CN101
CN902 (WHT)
1 F ERASE H(X)
2 F ERASE H(Y)
3 F ERASE H(G)
4 A ERASE H(X)
5 A ERASE H(Y)
6 AUDIO HEAD(X)
7 AUDIO HEAD(Y)
8 AUDIO HEAD(G)
FULL ERASE HEAD
AUDIO ERASE HEAD
AUDIO HEAD
(RED)
(BLK)
(BLU)
CN901 (RED)
1 AM AUDIO OUT(X)
2 AM AUDIO OUT(Y)
3 AM AUDIO IN(X)
4 AM AUDIO IN(Y)
5 HIGH CUT
TO AF-14 BOARD CN011

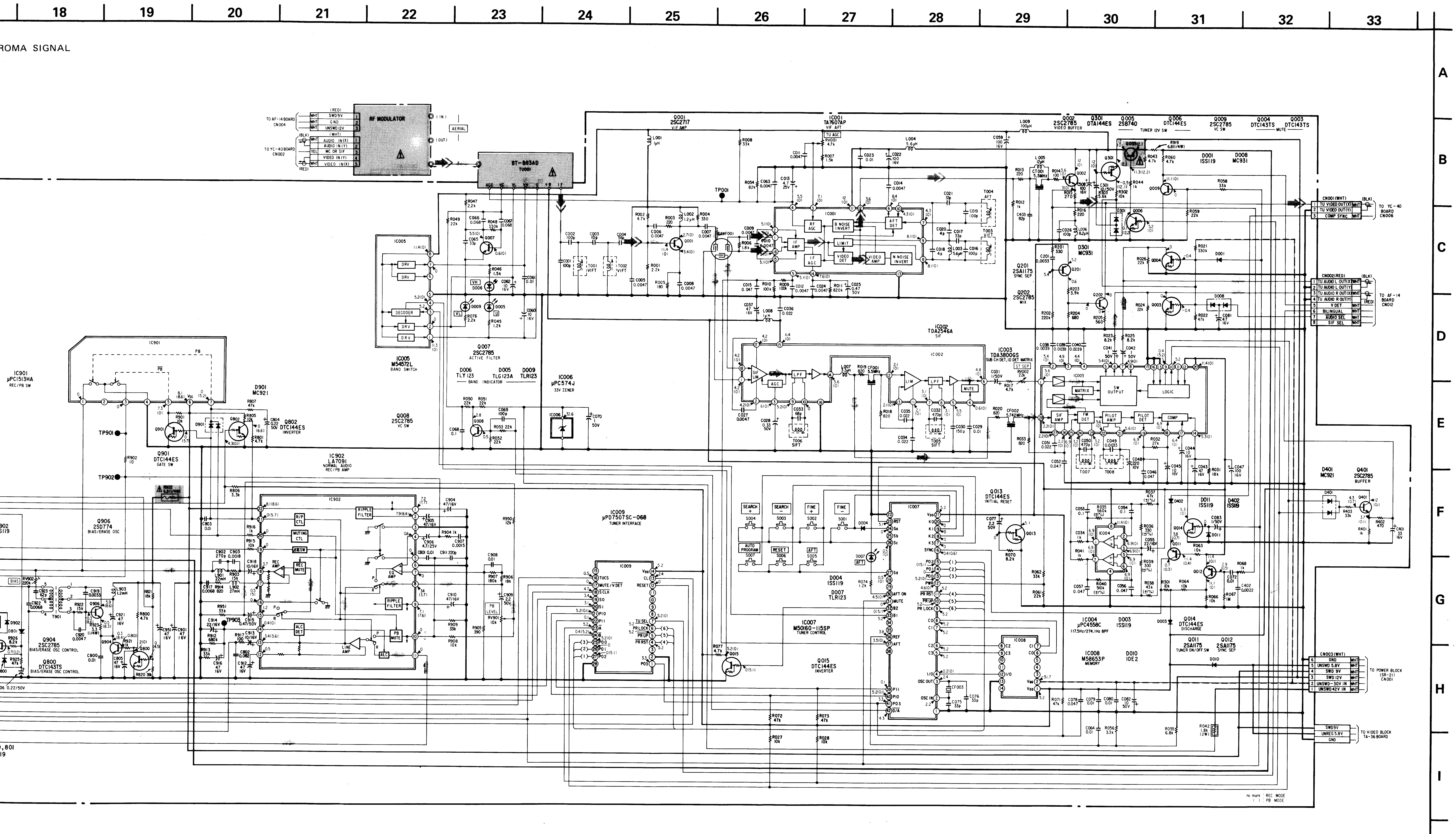
9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

- Signal path
  ➡ : REC Y & CHROMA SIGNAL


Q
IC
D
ADJ
TP
IC005
TU001
RV001
RV902
RV901
LV901
RF MODULATOR
AERIAL
(IN)
(OUT)
SWD9V IN
GND
UNI2V IN
TO AF-14 BOARD CN004
AUDIO IN(X)
AUDIO IN(Y)
MC or SIF
VIDEO IN(Y)
VIDEO IN(X)
TO YC-40 BOARD CN002
CN501 (WHT)
TO SS-50 BOARD CN114
CN503 (RED)
TO YC-40 BOARD CN10
CN001 (WHT)
TU VIDEO OUT(X)
TU VIDEO OUT(Y)
COMP SYNC
TO YC-40 BOARD CN6
CN502 (BLK)
TO SS-50 BOARD CN111
CN902 (WHT)
F ERASE H(X)
F ERASE H(Y)
F ERASE H(G)
A ERASE H(X)
A ERASE H(Y)
AUDIO HEAD(X)
AUDIO HEAD(Y)
AUDIO HEAD(G)
FULL ERASE HEAD
AUDIO ERASE HEAD
AUDIO HEAD
CN901 (RED)
AM AUDIO OUT(X)
AM AUDIO OUT(Y)
AM AUDIO IN(X)
AM AUDIO IN(Y)
HIGH CUT
TO AF-14 BOARD CN011
1-617-031-
13
no mark : REC MODE
( ) : PB MODE


TA-36 BOARD (1/2)
RF MODULATOR
BT-883AD TU001
TO AF-14 BOARD CN004
TO YC-40 BOARD CN002
AERIAL
IC005 M54572L BAND SWITCH
Q007 2SC2785 ACTIVE FILTER
D006 TLY123
D005 TLG123A
D009 TLR123
BAND INDICATOR
IC006 µPC574J 33V ZENER
Q008 2SC2785 VC SW
IC901 µPC1513HA REC/PB SW
D901 MC921
Q901 DTC144ES GATE SW
Q802 DTC144ES INVERTER
IC902 LA7091 NORMAL AUDIO REC/PB AMP
IC009 µPD7507SC-068 TUNER INTERFACE
CN004 (WHT)
SO BUS
SI BUS
S CLK
TUNER CS
RESET
GND(D)
BIAS CONT
PB+V1NS
A MUTE
REC P
MUTE+V DET
333kHz
TO SS-50 BOARD CN101
CN902 (WHT)
FULL ERASE HEAD
AUDIO ERASE HEAD
AUDIO HEAD
Q907 2SC2785 RELAY DRIVE
D902 1SS119
Q906 2SD774 BIAS/ERASE OSC
Q904 2SC2785 BIAS/ERASE OSC CONTROL
Q800 DTC143TS BIAS/ERASE OSC CONTROL
TP901
TP902
TP903
TP904
TP905
RY901
CN901 (RED)
AM AUDIO OUT(X)
AM AUDIO OUT(Y)
AM AUDIO IN(X)
AM AUDIO IN(Y)
HIGH CUT
TO AF-14 BOARD CN011
D800,801 1SS119
R/P CTL
MUTING CTL
REC AMP
REC MUTE
EQ AMP
RIPPLE FILTER
ALC DET
LINE AMP
PB MUTE
ALC
PB LEVEL RV901
TU SEL
MUTE/V DET
PRLOCK
PRUP
PRRST

MC-Service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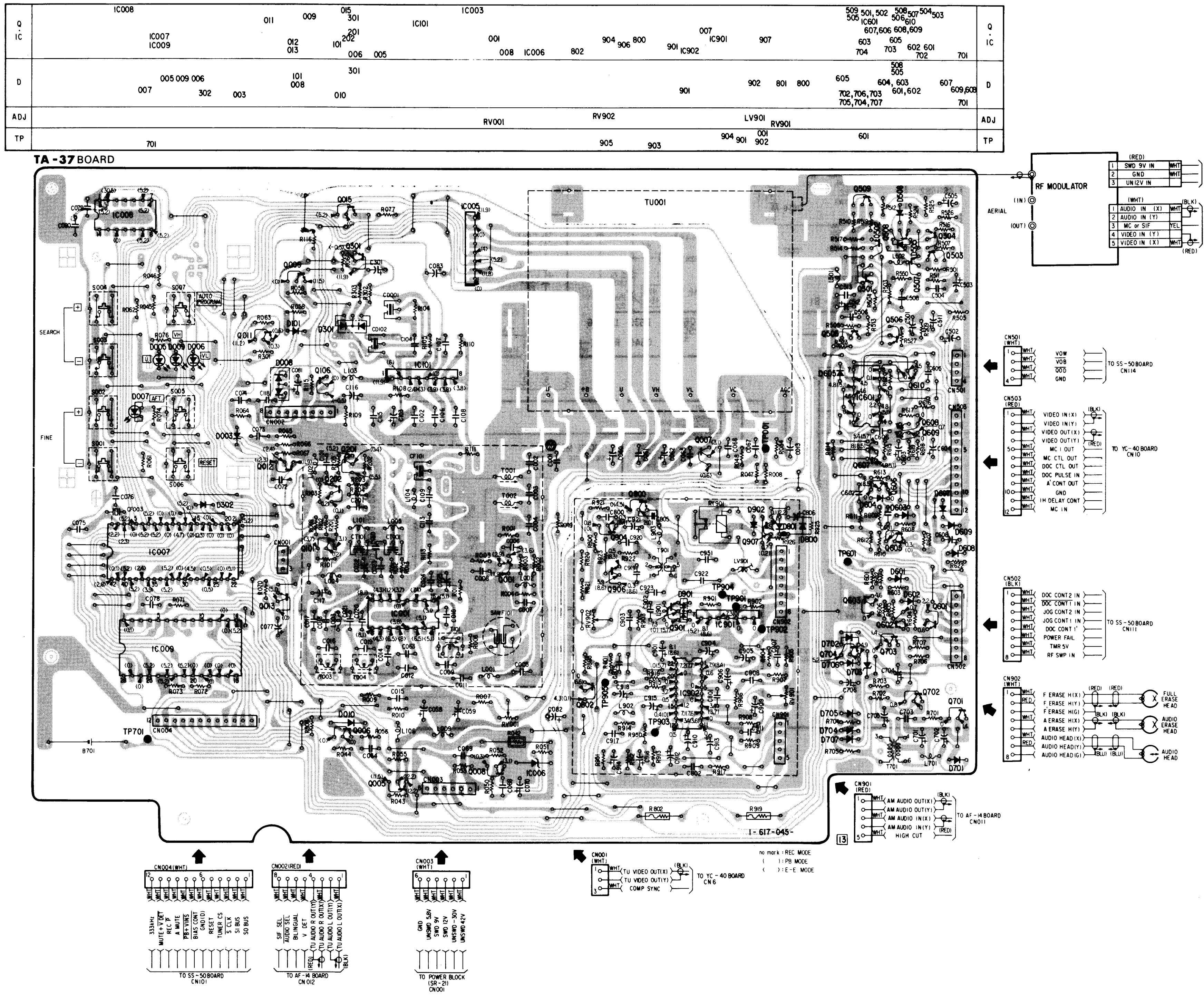
32
33
A
B
C
D
E
F
G
H
I
J
ROMA SIGNAL
RF MODULATOR
AERIAL
BT-883AD TU001
TO AF-14 BOARD CN004
TO YC-40 BOARD CN002
Q001 2SC2717 VIF AMP
IC001 TA7607AP VIF AFT
Q002 2SC2785 VIDEO BUFFER
Q301 DTA144ES
Q005 2SB740 TUNER 12V SW
Q006 DTC144ES
Q009 2SC2785 VC SW
Q004 DTC143TS
Q003 DTC143TS MUTE
D001 ISS119
D008 MC931
TP001
TO YC-40 BOARD CN006
TO AF-14 BOARD CN002
CN001(WHT)
CN002(RED)
IC005 M54572L BAND SWITCH
Q007 2SC2785 ACTIVE FILTER
D006 TLY123
D005 TLG123A
D009 TLR123
BAND INDICATOR
IC006 μPC574J 33V ZENER
Q008 2SC2785 VC SW
IC002 TDA2546A SIF
IC003 TDA3800GS SUB CH DET, ID DET MATRIX
Q201 2SA1175 SYNC SEP
Q202 2SC2785 MIX
D301 MC931
IC901 μPC1513HA REC/PB SW
D901 MC921
Q802 DTC144ES INVERTER
Q901 DTC144ES GATE SW
TP901
TP902
IC902 LA7091 NORMAL AUDIO REC/PB AMP
Q906 2SD774 BIAS/ERASE OSC
Q904 2SC2785 BIAS/ERASE OSC CONTROL
Q800 DTC143TS BIAS/ERASE OSC CONTROL
TP903
IC009 μPD7507SC-068 TUNER INTERFACE
SEARCH
FINE
AUTO PROGRAM
RESET
AFT
D004 ISS119
D007 TLR123
IC007 M50160-115SP TUNER CONTROL
Q013 DTC144ES INITIAL RESET
Q015 DTC144ES INVERTER
IC008
IC004 μPC4558C 117.5kHz/274.1Hz BPF
D003 ISS119
Q014 DTC144ES DISCHARGE
Q011 2SA1175 TUNER ON/OFF SW
Q012 2SA1175 SYNC SEP
IC008 M58653P MEMORY
D010 10E2
D401 MC921
Q401 2SC2785 BUFFER
D011 ISS119
D402 ISS119
CN003(WHT)
TO POWER BLOCK (SR-21) CN001
TO VIDEO BLOCK TA-36 BOARD
no mark : REC MODE
( ) : PB MODE

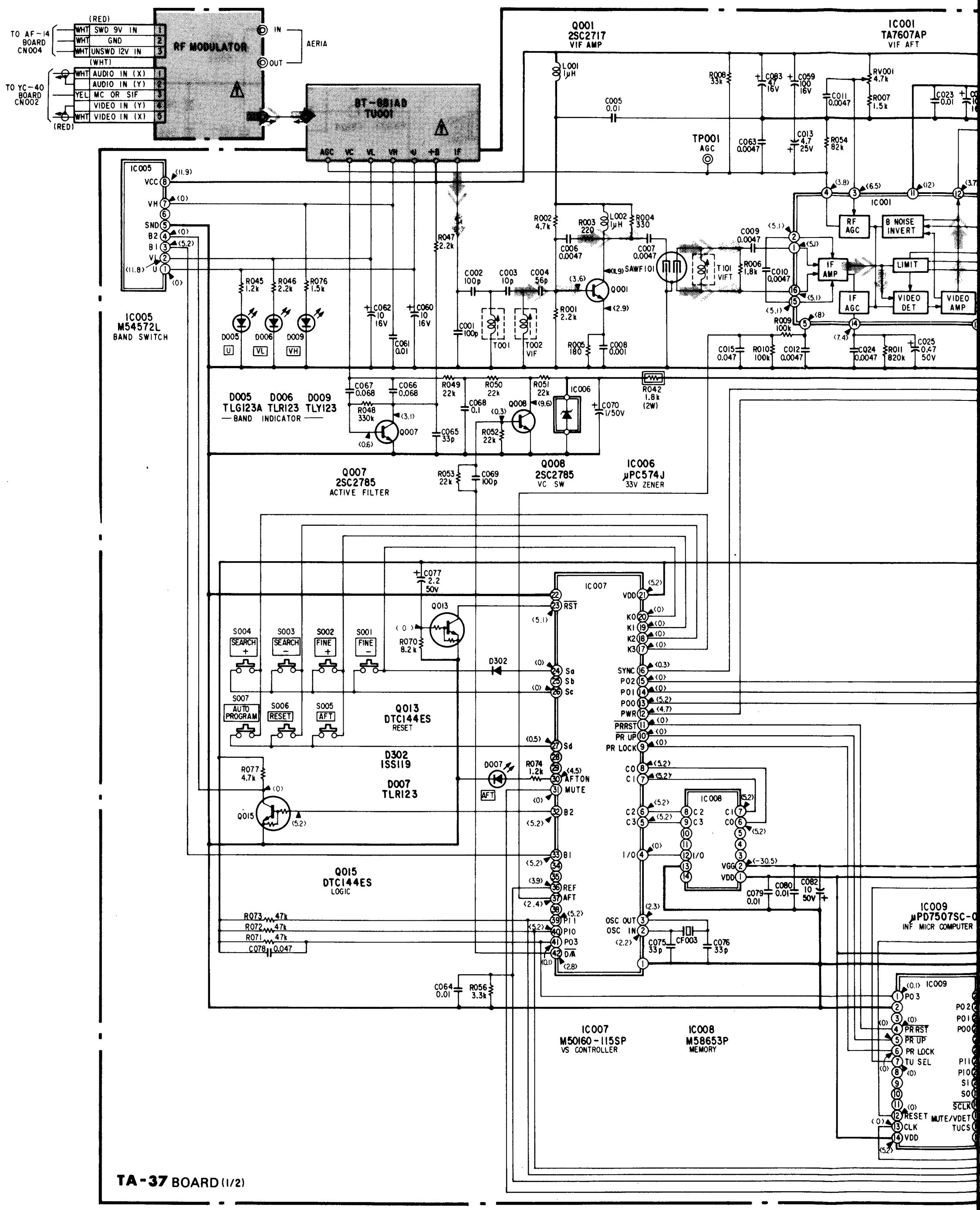
MC-Service

1-9. TA-37 (TUNER, AUDIO) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

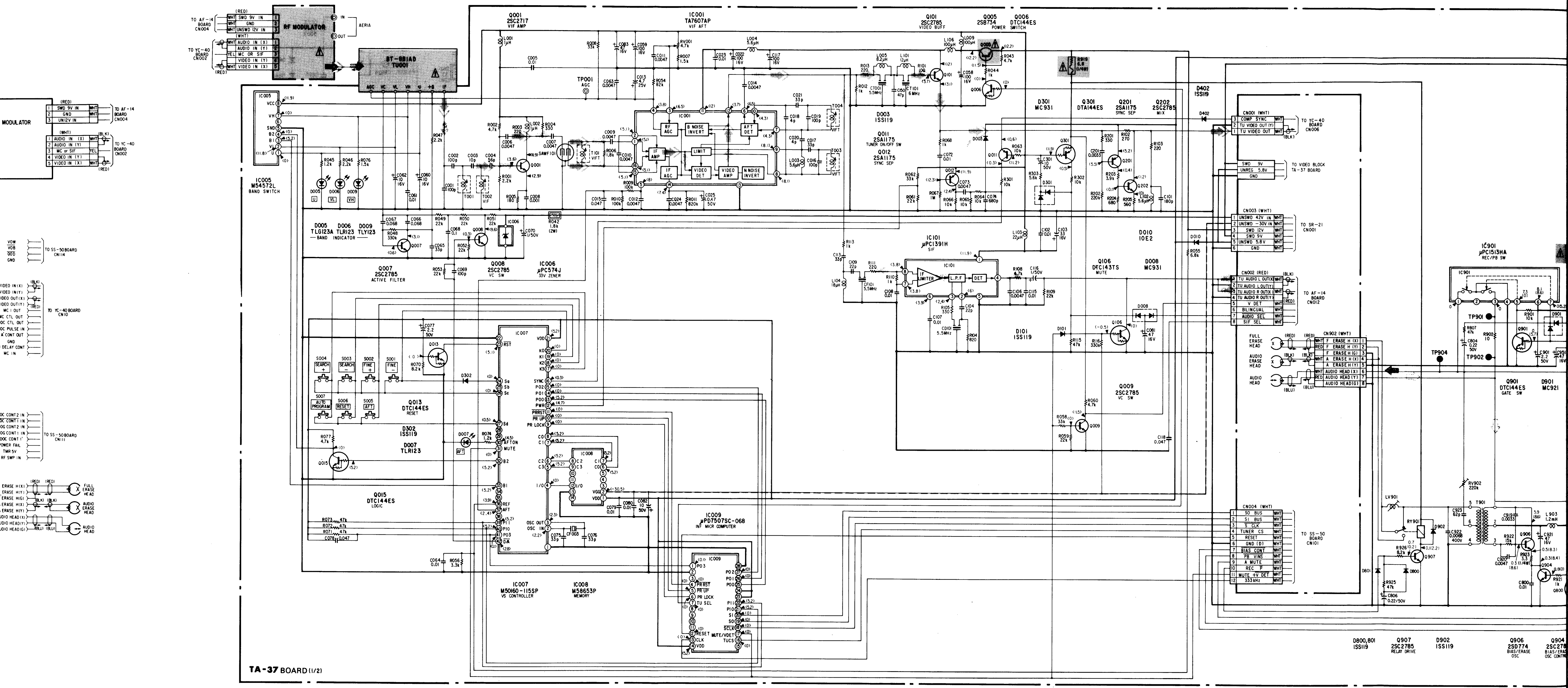
– Ref. No. TA-37 BOARD: 5,000 series –

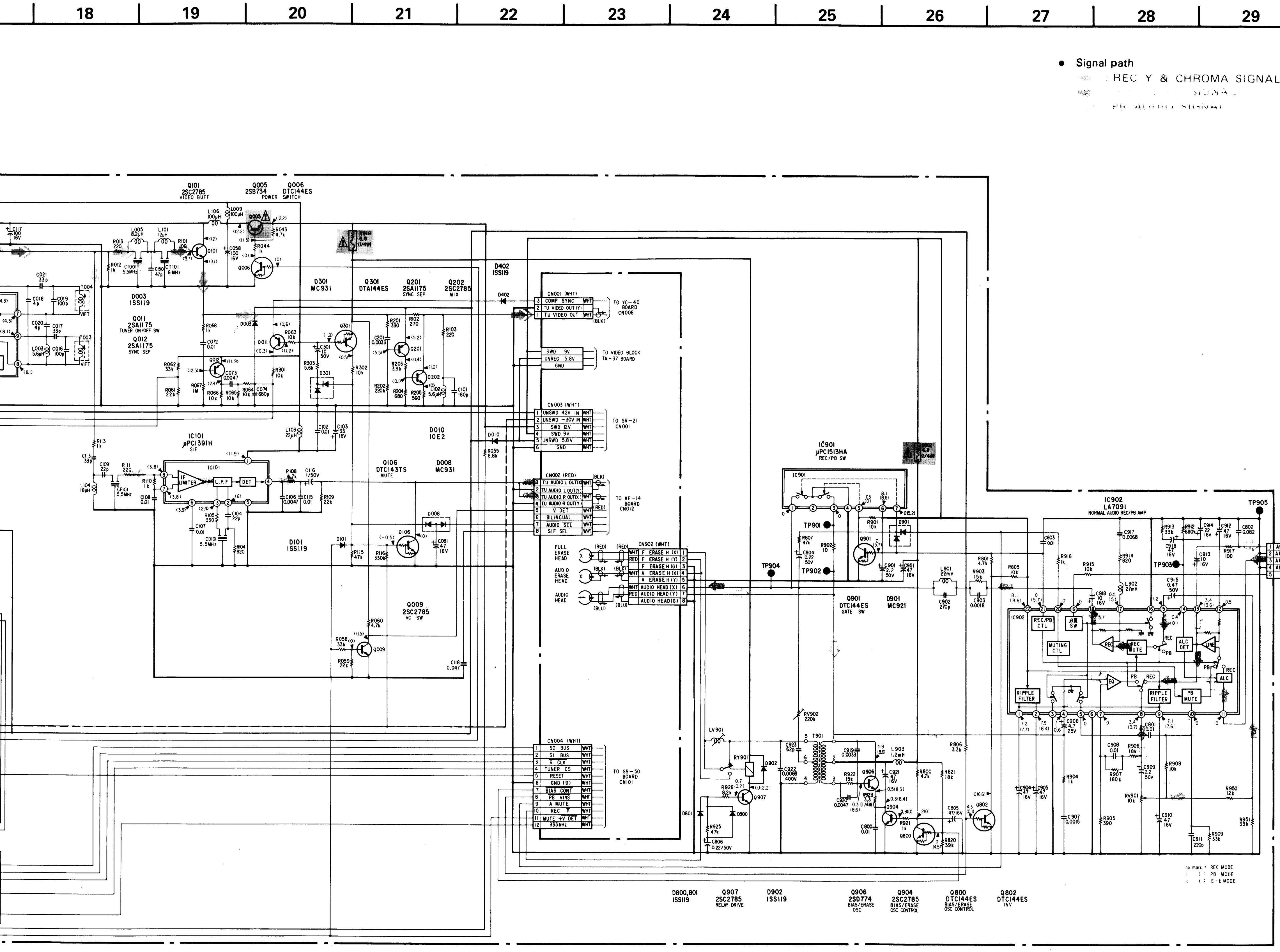
<E Model>


Q·IC
D
ADJ
TP
TA-37 BOARD
TU001
RF MODULATOR
AERIAL
TO AF-14 BOARD CN004
TO YC-40 BOARD CN002
TO SS-50 BOARD CN114
TO YC-40 BOARD CN10
TO SS-50 BOARD CN111
FULL ERASE HEAD
AUDIO ERASE HEAD
AUDIO HEAD
TO AF-14 BOARD CN011
TO YC-40 BOARD CN6
TO SS-50 BOARD CN101
TO AF-14 BOARD CN012
TO POWER BLOCK (SR-21) CN001
SEARCH
FINE
TP701
1-617-045-


RF MODULATOR
BT-881AD TU001
AERIA
Q001 2SC2717 VIF AMP
IC001 TA7607AP VIF AFT
IC005 M54572L BAND SWITCH
D005 TLG123A D006 TLR123 D009 TLY123 — BAND INDICATOR
Q007 2SC2785 ACTIVE FILTER
Q008 2SC2785 VC SW
IC006 µPC574J 33V ZENER
IC007
Q013 DTC144ES RESET
D302 1SS119
D007 TLR123
Q015 DTC144ES LOGIC
IC007 M50160-115SP VS CONTROLLER
IC008 M58653P MEMORY
IC009 µPD7507SC INF MICR COMPUTER
TA-37 BOARD (1/2)

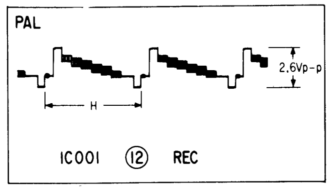
MC-Service


RF MODULATOR
BT-081A0 TU001
AERIA
IN
OUT
TO AF-14 BOARD CN004
TO YC-40 BOARD CN002
MODULATOR
SWD 9V IN
GND
UNREG 12V IN
AUDIO IN (X)
AUDIO IN (Y)
MC or SIF
VIDEO IN (Y)
VIDEO IN (X)
IC005 M54572L BAND SWITCH
Q001 2SC2717 VIF AMP
IC001 TA7607AP VIF AFT
RF AGC
B NOISE INVERT
IF AMP
IF AGC
LIMIT
VIDEO DET
VIDEO AMP
N NOISE INVERT
AFT DET
TP001 AGC
Q101 2SC2785 VIDEO BUFF
Q005 2SB734 POWER SWITCH
Q006 DTC144ES
D003 1SS119
Q011 2SA1175 TUNER ON/OFF SW
Q012 2SA1175 SYNC SEP
D301 MC931
Q301 DTA144ES
Q201 2SA1175 SYNC SEP
Q202 2SC2785 MIX
D402 1SS119
CN001 (WHT)
COMP SYNC
TU VIDEO OUT (Y)
TU VIDEO OUT
TO YC-40 BOARD CN006
SWD 9V
UNREG 5.8V
GND
TO VIDEO BLOCK TA-37 BOARD
CN003 (WHT)
UNSWD 42V IN
UNSWD -30V IN
SWD 12V
SWD 9V
UNSWD 5.8V
GND
TO SR-21 CN001
D005 TLG123A
D006 TLR123
D009 TLY123
BAND INDICATOR
Q007 2SC2785 ACTIVE FILTER
Q008 2SC2785 VC SW
IC006 μPC574J 33V ZENER
IC101 μPC1391H SIF
IF LIMITER
L.P.F
DET
D010 10E2
Q106 DTC143TS MUTE
D008 MC931
D101 1SS119
CN002 (RED)
TU AUDIO L OUT(X)
TU AUDIO L OUT(Y)
TU AUDIO R OUT(X)
TU AUDIO R OUT(Y)
V DET
BILINGUAL
AUDIO SEL
SIF SEL
TO AF-14 BOARD CN012
IC901 μPC1513HA REC/PB SW
TP901
TP902
TP904
FULL ERASE HEAD
AUDIO ERASE HEAD
AUDIO HEAD
CN902 (WHT)
F ERASE H (X)
F ERASE H (Y)
F ERASE H (G)
A ERASE H (X)
A ERASE H (Y)
AUDIO HEAD (X)
AUDIO HEAD (Y)
AUDIO HEAD (G)
Q901 DTC144ES GATE SW
D901 MC921
Q009 2SC2785 VC SW
S004 SEARCH +
S003 SEARCH −
S002 FINE +
S001 FINE −
S007 AUTO PROGRAM
S006 RESET
S005 AFT
Q013 DTC144ES RESET
D302 1SS119
D007 TLR123
Q015 DTC144ES LOGIC
IC007
IC008
IC007 M50160-115SP VS CONTROLLER
IC008 M58653P MEMORY
IC009 μPD7507SC-068 INF MICR COMPUTER
CN004 (WHT)
SO BUS
SI BUS
S CLK
TUNER CS
RESET
GND (D)
BIAS CONT
PB VINS
A MUTE
REC P
MUTE +V DET
333kHz
TO SS-50 BOARD CN101
TO SS-50 BOARD CN114
TO YC-40 BOARD CN110
TO SS-50 BOARD CN111
RY901
LV901
RV902 220k
T901
D800,801 1SS119
Q907 2SC2785 RELAY DRIVE
D902 1SS119
Q906 2SD774 BIAS/ERASE OSC
Q904 2SC278 BIAS/ERAS OSC CONT
TA-37 BOARD (1/2)


18
19
20
21
22
23
24
25
26
27
28
29
Q101 2SC2785 VIDEO BUFF
Q005 2SB734 POWER
Q006 DTC144ES SWITCH
D003 1SS119
Q011 2SA1175 TUNER ON/OFF SW
Q012 2SA1175 SYNC SEP
D301 MC931
Q301 DTA144ES
Q201 2SA1175 SYNC SEP
Q202 2SC2785 MIX
D402 1SS119
CN001 (WHT)
COMP SYNC
TU VIDEO OUT (Y)
TU VIDEO OUT
TO YC-40 BOARD CN006
SWD 9V
UNREG 5.8V
GND
TO VIDEO BLOCK TA-37 BOARD
CN003 (WHT)
UNSWD 42V IN
UNSWD -30V IN
SWD 12V
SWD 9V
UNSWD 5.8V
GND
TO SR-21 CN001
IC101 μPC1391H SIF
LIMITER
L.P.F
DET
Q106 DTC143TS MUTE
D008 MC931
D010 10E2
CN002 (RED)
TU AUDIO L OUT(X)
TU AUDIO L OUT(Y)
TU AUDIO R OUT(X)
TU AUDIO R OUT(Y)
V DET
BILINCUAL
AUDIO SEL
SIF SEL
TO AF-14 BOARD CN012
D101 1SS119
Q009 2SC2785 VC SW
CN902 (WHT)
F ERASE H (X)
F ERASE H (Y)
F ERASE H (G)
A ERASE H (X)
A ERASE H (Y)
AUDIO HEAD (X)
AUDIO HEAD (Y)
AUDIO HEAD (G)
FULL ERASE HEAD
AUDIO ERASE HEAD
AUDIO HEAD
CN004 (WHT)
SO BUS
SI BUS
S CLK
TUNER CS
RESET
GND (D)
BIAS CONT
PB VINS
A MUTE
REC P
MUTE +V DET
333kHz
TO SS-50 BOARD CN101
IC901 μPC1513HA REC/PB SW
TP901
TP902
TP904
Q901 DTC144ES GATE SW
D901 MC921
IC902 LA7091 NORMAL AUDIO REC/PB AMP
REC/PB CTL
MUTING CTL
RIPPLE FILTER
EQ
REC MUTE
ALC DET
ALC
PB MUTE
TP903
TP905
CN901 (RED)
AM AUDIO OUT(X)
AM AUDIO OUT(Y)
AM AUDIO IN (X)
AM AUDIO IN (Y)
HIGH CUT
TO AF-14 BOARD CN011
LV901
RY901
T901
RV902 220k
RV901 10k
D800,801 1SS119
Q907 2SC2785 RELAY DRIVE
D902 1SS119
Q906 2SD774 BIAS/ERASE OSC
Q904 2SC2785 BIAS/ERASE OSC CONTROL
Q800 DTC144ES BIAS/ERASE OSC CONTROL
Q802 DTC144ES INV
no mark : REC MODE
( ) : PB MODE
( ) : E-E MODE

- Signal path
  REC Y & CHROMA SIGNAL
  SIGNAL
  PB AUDIO SIGNAL

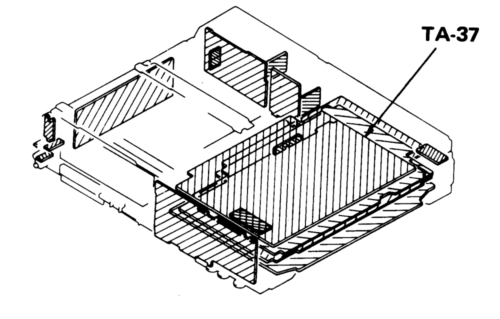
TA-37 BOARD



Note on Printed Wiring Board:

- ○—— : Indicates a leadwire mounted on the component side.
- ●—— : Indicates a leadwire mounted on the printed side.
- ░ : soldering side.
- ░ : B+ pattern
- ▨ : [illegible] pattern
- Digital transistor (TA-37: Q006, 013, 015, 106, 301, 508, 601, 604, 605, 610, 703, 800, 802, 901) transistors with resistors.
  Refer to TA-37 board schematic diagram for digital transistor.

When indicating parts by reference number, please include the board name.



Note on Schematic Diagram:

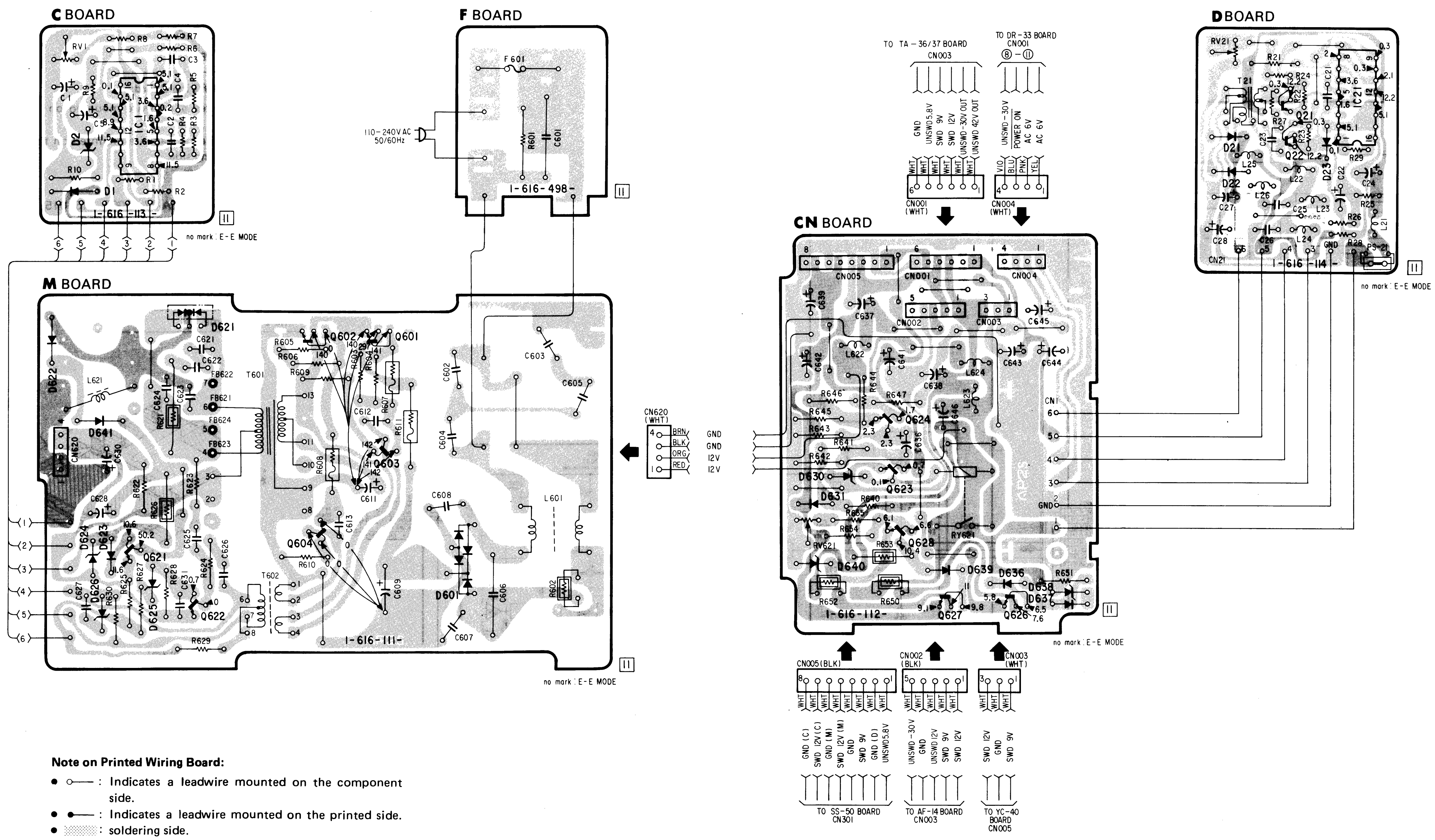
- All resistors are in ohms, $^1/_6$W unless otherwise noted. kΩ: 1000 Ω, MΩ: 1000 kΩ
- All capacitors are in μF unless otherwise noted. p: μμF 50WV or less are not indicated except for electrolytics.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.
- The red lines show the main voltages.
- All voltages are dc measured with a VOM (10 MΩ).
- ━━ : B+ bus.
- ━ ━ : B− bus.

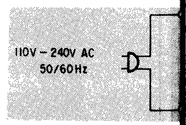
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

1-10. M (POWER), CN (POWER), C (POWER), D (POWER), F (POWER) PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

– Ref. No. M BOARD: 11,000 series, CN BOARD: 11,000 series, C BOARD: 11,000 series, D BOARD: 11,000 sereis, F BOARD: 11,000 series –

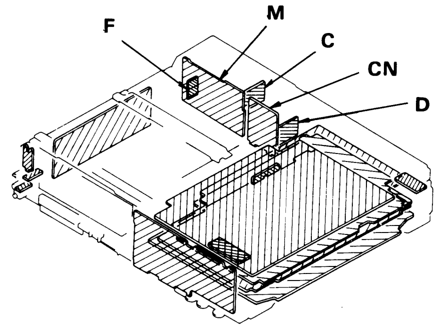

C BOARD
RV1
R8
R7
R6
C3
C1
R9
IC1
D2
R10
D1
R1
R2
1-616-113-
no mark : E-E MODE
F BOARD
F601
110-240V AC 50/60Hz
R601
C601
1-616-498-
M BOARD
D621
D622
L621
D641
CN620
C621
C622
FB622
FB621
FB624
FB623
T601
R605
R606
R609
Q602
Q601
C602
C603
C605
C604
C612
R607
R611
R608
Q603
C611
C608
L601
Q604
C613
D601
C606
R602
C609
T602
R610
C607
1-616-111-
D624
D623
Q621
D626
D625
Q622
R629
no mark : E-E MODE
CN620 (WHT)
BRN
BLK
ORG
RED
GND
GND
12V
12V
TO TA-36/37 BOARD CN003
GND
UNSWD5.8V
SWD 9V
SWD 12V
UNSWD -30V OUT
UNSWD 42V OUT
CN001 (WHT)
TO DR-33 BOARD CN001 ⑧-⑪
UNSWD -30V
POWER ON
AC 6V
AC 6V
VIO
BLU
PNK
YEL
CN004 (WHT)
CN BOARD
CN005
CN001
CN004
CN002
CN003
C639
C637
C645
C642
L622
C641
R644
C643
C644
L624
C638
R646
R647
R645
Q624
R643
R641
R642
D630
Q623
D631
R640
R654
RY621
RV621
R653
Q628
D640
D639
D636
R651
R652
R650
Q627
Q626
D638
D637
1-616-112-
no mark : E-E MODE
CN1
GND
CN005 (BLK)
CN002 (BLK)
CN003 (WHT)
GND (C)
SWD 12V (C)
GND (M)
SWD 12V (M)
GND
SWD 9V
GND (D)
UNSWD5.8V
UNSWD -30V
GND
UNSWD 12V
SWD 9V
SWD 12V
SWD 12V
GND
SWD 9V
TO SS-50 BOARD CN301
TO AF-14 BOARD CN003
TO YC-40 BOARD CN005
D BOARD
RV21
R21
T21
R24
Q21
IC21
D21
C23
R27
Q22
D22
L25
L22
D23
C22
C24
C27
L26
C25
L23
R25
R26
L21
C28
C26
L24
R28
CN21
1-616-114-
no mark : E-E MODE


110V - 240V AC 50/60Hz

Note on Printed Wiring Board:

- ○—— : Indicates a leadwire mounted on the component side.
- ●—— : Indicates a leadwire mounted on the printed side.
- ░ : soldering side.
- ░ : B+ pattern
- ▩ : [illegible]

When indicating parts by reference number, please include the board name.

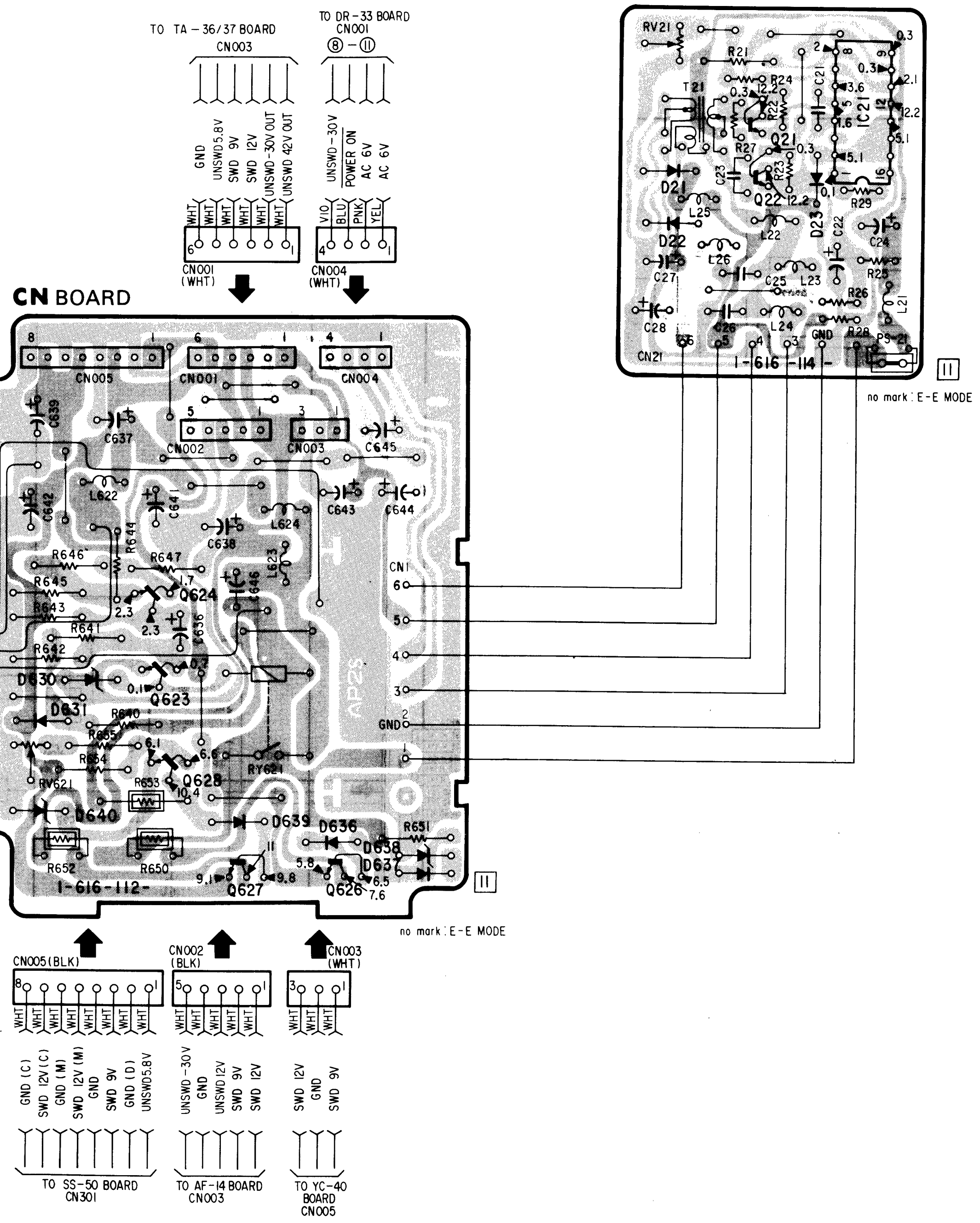


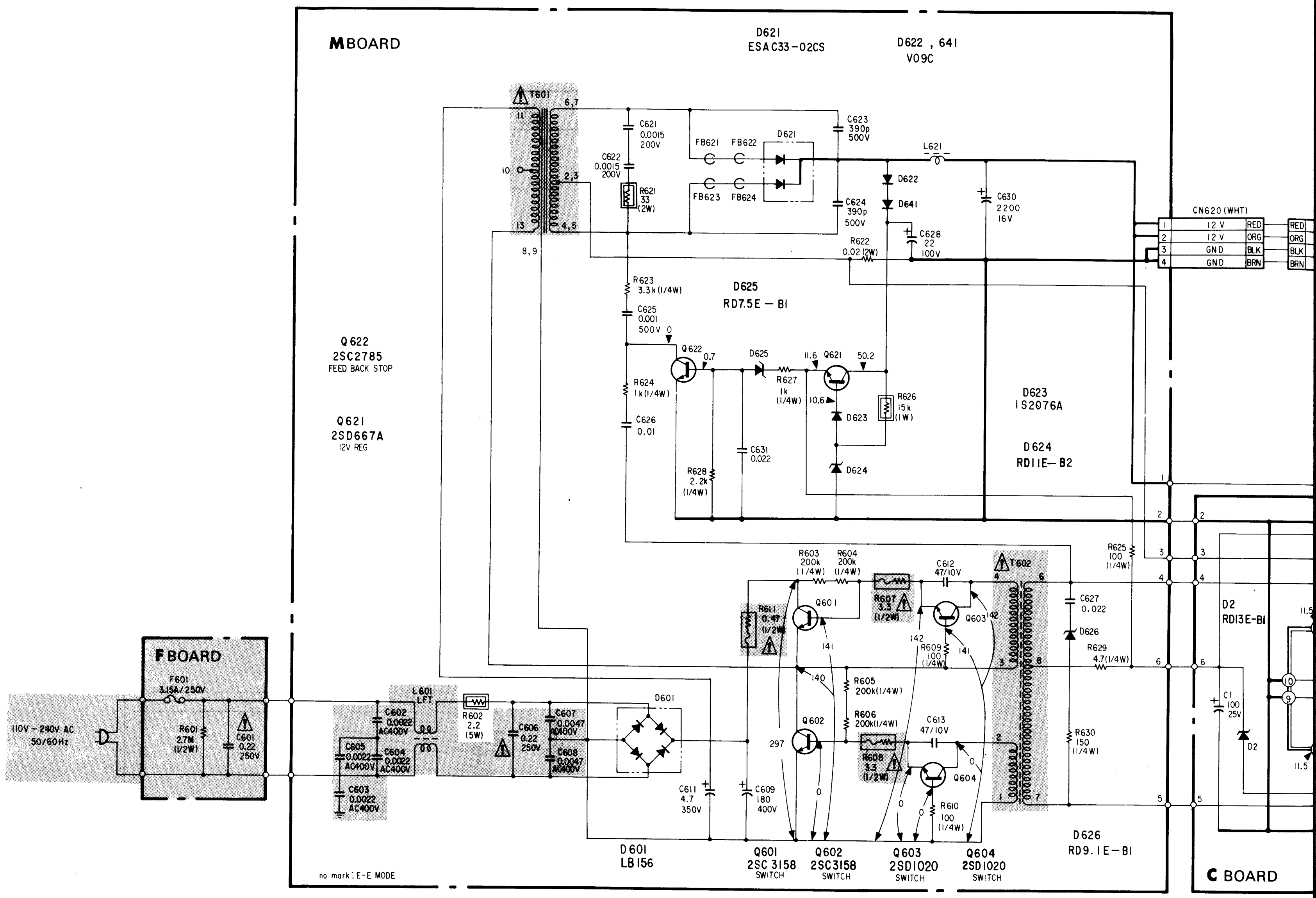
Note on Schematic Diagram:

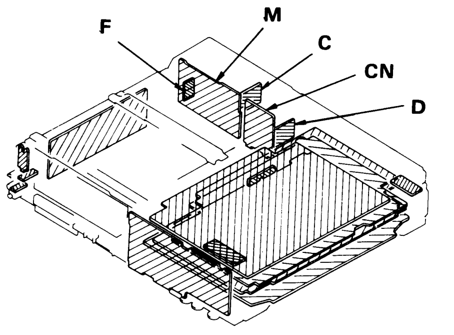
- All resistors are in ohms, 1/6 W unless otherw
  kΩ: 1000 Ω, MΩ: 1000 kΩ
- All capacitors are in μF unless otherwise not
  50WV or less are not indicated except for el
- All variable and adjustable resistors have ch
  curve B, unless otherwise noted.
- ⊟ : nonflammable resistor.
- ⊟ : fusible resistor.
- The red lines show the main voltages.
- All voltages are dc measured with a VOM (10 M
- ━━ : B+ bus.
- ━ ━ ━ : B– bus.

Note: The components identified by shadi
⚠ are critical for safety. Replac
part number specified.

When indicating parts by reference number, please include the board name.


D BOARD
CN BOARD
TO TA-36/37 BOARD CN003
TO DR-33 BOARD CN001 ⑧-⑪
GND
UNSWD5.8V
SWD 9V
SWD 12V
UNSWD -30V OUT
UNSWD 42V OUT
UNSWD -30V
POWER ON
AC 6V
AC 6V
CN001 (WHT)
CN004 (WHT)
CN005
CN002
CN003
CN1
1-616-114-
1-616-112-
no mark : E-E MODE
CN005 (BLK)
CN002 (BLK)
CN003 (WHT)
GND (C)
SWD 12V (C)
GND (M)
SWD 12V (M)
GND
SWD 9V
GND (D)
UNSWD5.8V
UNSWD -30V
GND
UNSWD12V
SWD 12V
SWD 12V
SWD 12V
GND
SWD 9V
TO SS-50 BOARD CN301
TO AF-14 BOARD CN003
TO YC-40 BOARD CN005


M BOARD
F BOARD
C BOARD
D621 ESAC33-02CS
D622, 641 V09C
T601
T602
F601 3.15A/250V
110V-240V AC 50/60Hz
R601 2.7M (1/2W)
C601 0.22 250V
L601 LFT
R602 2.2 (5W)
CN620 (WHT)
12 V RED
12 V ORG
GND BLK
GND BRN
Q622 2SC2785 FEED BACK STOP
Q621 2SD667A 12V REG
D625 RD7.5E-B1
D623 1S2076A
D624 RD11E-B2
D626 RD9.1E-B1
D2 RD13E-B1
D601 LB156
Q601 2SC3158 SWITCH
Q602 2SC3158 SWITCH
Q603 2SD1020 SWITCH
Q604 2SD1020 SWITCH
no mark : E-E MODE

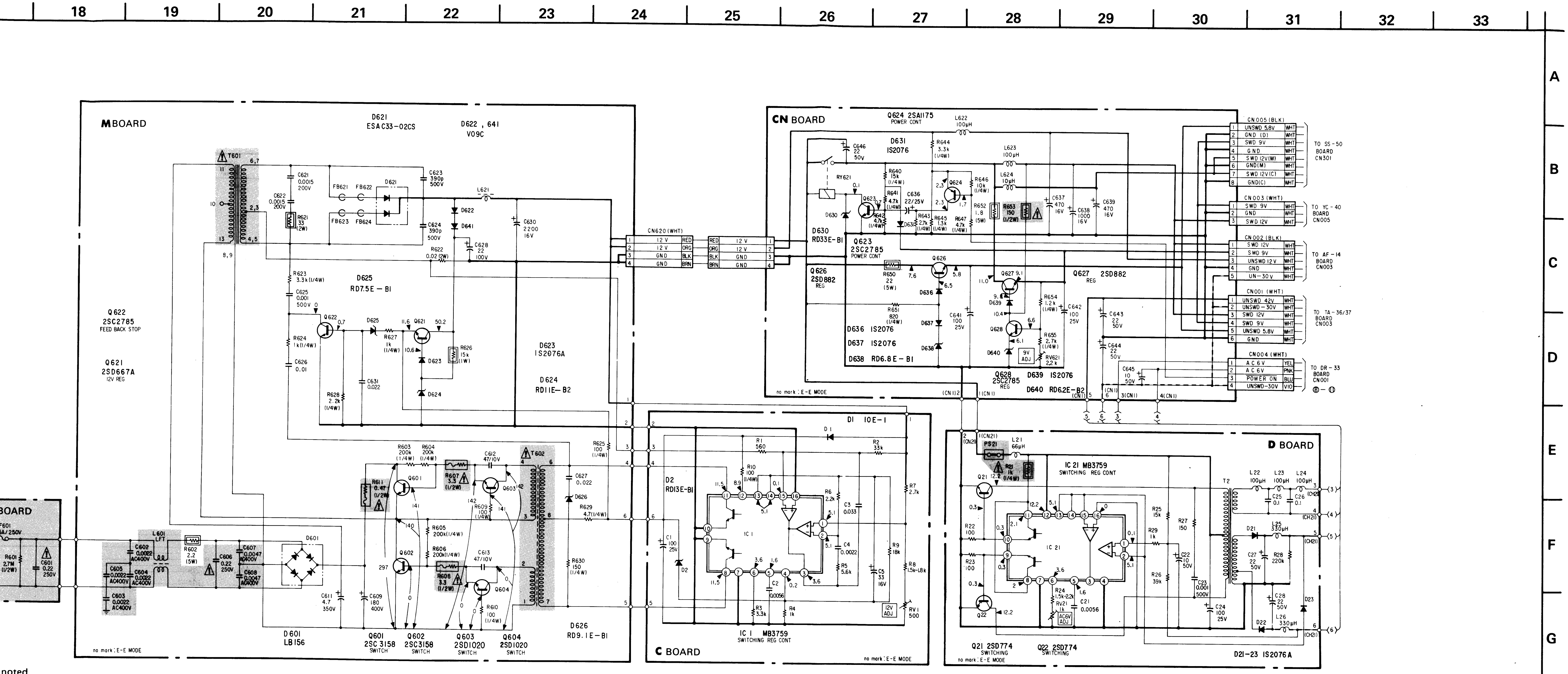


Note on Schematic Diagram:

- All resistors are in ohms, 1/6 W unless otherwise noted. kΩ: 1000 Ω, MΩ: 1000 kΩ
- All capacitors are in μF unless otherwise noted. p: μμF 50WV or less are not indicated except for electrolytics.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.
- The red lines show the main voltages.
- All voltages are dc measured with a VOM (10 MΩ).
- ━━ : B+ bus.
- ━ ━ : B− bus.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.


M BOARD
CN BOARD
C BOARD
D BOARD
T601
T602
D621 ESAC33-02CS
D622 , 641 V09C
D625 RD7.5E-BI
D623 IS2076A
D624 RD11E-B2
D626 RD9.1E-BI
D601 LB156
Q622 2SC2785 FEED BACK STOP
Q621 2SD667A 12V REG
Q601 2SC3158 SWITCH
Q602 2SC3158 SWITCH
Q603 2SD1020 SWITCH
Q604 2SD1020 SWITCH
CN620 (WHT)
12 V
GND
Q624 2SA1175 POWER CONT
D631 IS2076
D630 RD33E-BI
Q623 2SC2785 POWER CONT
Q626 2SD882 REG
Q627 2SD882 REG
Q628 2SC2785 REG
D636 IS2076
D637 IS2076
D638 RD6.8E-BI
D639 IS2076
D640 RD6.2E-B2
RY621
CN005 (BLK)
TO SS-50 BOARD CN301
CN003 (WHT)
TO YC-40 BOARD CN005
CN002 (BLK)
TO AF-14 BOARD CN003
CN001 (WHT)
TO TA-36/37 BOARD CN003
CN004 (WHT)
TO DR-33 BOARD CN001
UNSWD 5.8V
SWD 9V
SWD 12V(M)
SWD 12V(C)
UNSWD 12V
UN-30V
UNSWD 42V
UNSWD -30V
AC 6V
POWER ON
UNSWD-30V
D1 10E-1
D2 RD13E-BI
IC1 MB3759 SWITCHING REG CONT
IC 21 MB3759 SWITCHING REG CONT
Q21 2SD774 SWITCHING
Q22 2SD774 SWITCHING
D21-23 IS2076A
T2
L21 66µH
PS21
12V ADJ
9V ADJ
AC6V ADJ
no mark : E-E MODE
18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33
A B C D E F G H I J

noted.

o: μμF
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teristic

nd mark
nly with

2. ELECTRICAL PARTS LIST

NOTE:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS

- All resistors are in ohms
- F : nonflammable

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

CAPACITORS

- MF : μF, PF : μμF

COILS

- MMH : mH, UH : μH

Ref.No	Part No.	Description				Remark
	A-4910-063-A	R STATOR (REEL MOTOR) BOARD, COMPLETE				
		**				
	*1-560-461-00	PIN, CONNECTOR 5P				
		CAPACITOR				
C1	1-123-821-00	ELECT	47MF	20%	16V	
C2	1-123-821-00	ELECT	47MF	20%	16V	
C3	1-123-821-00	ELECT	47MF	20%	16V	
C4	1-123-821-00	ELECT	47MF	20%	16V	
		DIODE				
H1	8-719-800-31	DIODE THS103A-1				
H2	8-719-800-31	DIODE THS103A-1				
		IC				
IC1	8-759-801-97	IC LB1615				
		RESISTOR				
R1	1-247-823-00	CARBON	470	5%	1/6W	
R2	1-249-429-11	CARBON	10K	5%	1/6W	
R3	1-249-437-11	CARBON	47K	5%	1/6W	
R4	1-249-437-11	CARBON	47K	5%	1/6W	
R5	1-249-437-11	CARBON	47K	5%	1/6W	
R6	1-249-437-11	CARBON	47K	5%	1/6W	

****

Ref.No	Part No.	Description				Remark
	*A-6711-658-A	YC-40 BOARD, COMPLETE (ES MODEL)				
		*********************************				
	*A-6711-698-A	YC-40 BOARD, COMPLETE (E MODEL)				
		********************************				
	3-683-631-01	CLAMP				
		BAND PASS FILTER				
BPF001	1-235-098-00	FILTER, BAND PASS				
		CAPACITOR				
C010	1-123-356-00	ELECT	10MF	20%	16V	
C013	1-123-306-00	ELECT	47MF	20%	10V	(ES MODEL)
C014	1-123-369-00	ELECT	4.7MF	20%	25V	(ES MODEL)
C015	1-123-306-00	ELECT	47MF	20%	10V	(ES MODEL)
C016	1-108-589-00	MYLAR	0.027MF	5%	50V	(ES MODEL)
C017	1-101-004-00	CERAMIC	0.01MF		50V	(ES MODEL)
C018	1-123-306-00	ELECT	47MF	20%	10V	(ES MODEL)
C019	1-101-004-00	CERAMIC	0.01MF		50V	(ES MODEL)
C020	1-101-004-00	CERAMIC	0.01MF		50V	
C021	1-101-004-00	CERAMIC	0.01MF		50V	
C023	1-101-882-00	CERAMIC	51PF	5%	50V	
C024	1-130-047-00	FILM	180PF	5%	50V	
C025	1-106-172-00	MYLAR	0.001MF	5%	50V	
C026	1-101-059-21	CERAMIC	510PF	5%	50V	

Ref.No	Part No.	Description			Remark
C027	1-161-045-00	CERAMIC	0.0033MF	10%	25V
C028	1-106-172-00	MYLAR	0.001MF	5%	50V
C029	1-123-382-00	ELECT	3.3MF	20%	50V
C032	1-102-816-00	CERAMIC	120PF	5%	50V
C033	1-101-004-00	CERAMIC	0.01MF		50V
C034	1-101-004-00	CERAMIC	0.01MF		50V
C035	1-102-816-00	CERAMIC	120PF	5%	50V
C036	1-101-882-00	CERAMIC	51PF	5%	50V
C037	1-101-004-00	CERAMIC	0.01MF		50V
C038	1-101-004-00	CERAMIC	0.01MF		50V
C039	1-101-004-00	CERAMIC	0.01MF		50V
C041	1-161-043-00	CERAMIC	0.0022MF	10%	25V
C042	1-102-516-00	CERAMIC	27PF	5%	50V
C043	1-101-004-00	CERAMIC	0.01MF		50V
C044	1-101-004-00	CERAMIC	0.01MF		50V
C045	1-102-523-00	CERAMIC	56PF	5%	50V
C046	1-101-004-00	CERAMIC	0.01MF		50V
C048	1-101-004-00	CERAMIC	0.01MF		50V
C049	1-101-004-00	CERAMIC	0.01MF		50V
C050	1-102-865-00	CERAMIC	8PF	0.5PF	50V
C051	1-102-525-00	CERAMIC	68PF	5%	50V
C052	1-102-525-00	CERAMIC	68PF	5%	50V
C053	1-123-380-00	ELECT	1MF	20%	50V
C054	1-161-040-00	CERAMIC	0.0012MF	10%	25V
C055	1-123-380-00	ELECT	1MF	20%	50V
C056	1-102-963-00	CERAMIC	33PF	5%	50V
C057	1-102-980-00	CERAMIC	270PF	5%	50V
C058	1-123-306-00	ELECT	47MF	20%	10V
C059	1-101-004-00	CERAMIC	0.01MF		50V
C060	1-108-579-00	MYLAR	0.01MF	5%	50V
C061	1-123-382-00	ELECT	3.3MF	20%	50V
C062	1-123-306-00	ELECT	47MF	20%	10V
C063	1-101-004-00	CERAMIC	0.01MF		50V
C064	1-102-521-00	CERAMIC	43PF	5%	50V
C065	1-102-525-00	CERAMIC	68PF	5%	50V
C066	1-102-525-00	CERAMIC	68PF	5%	50V
C068	1-101-004-00	CERAMIC	0.01MF		50V
C069	1-102-962-00	CERAMIC	30PF	5%	50V
C070	1-101-004-00	CERAMIC	0.01MF		50V
C071	1-123-380-00	ELECT	1MF	20%	50V
C072	1-101-004-00	CERAMIC	0.01MF		50V
C073	1-102-525-00	CERAMIC	68PF	5%	50V
C074	1-102-525-00	CERAMIC	68PF	5%	50V
C075	1-101-004-00	CERAMIC	0.01MF		50V
C076	1-102-951-00	CERAMIC	15PF	5%	50V
C077	1-123-330-00	ELECT	22MF	20%	16V
C078	1-123-330-00	ELECT	22MF	20%	16V
C079	1-102-852-00	CERAMIC	47PF	5%	50V
C080	1-101-004-00	CERAMIC	0.01MF		50V
C082	1-161-024-00	CERAMIC	0.082MF	10%	25V
C083	1-102-977-00	CERAMIC	200PF	5%	50V
C084	1-123-369-00	ELECT	4.7MF	20%	25V
C085	1-101-004-00	CERAMIC	0.01MF		50V

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Ref.No	Part No.	Description			Remark
C086	1-106-174-00	MYLAR	0.0012MF	5%	50V
C087	1-161-057-00	CERAMIC	0.033MF	10%	25V
C092	1-101-004-00	CERAMIC	0.01MF		50V
C093	1-101-006-00	CERAMIC	0.047MF		50V
C094	1-101-006-00	CERAMIC	0.047MF		50V
C095	1-102-976-00	CERAMIC	180PF	5%	50V
C096	1-102-824-00	CERAMIC	470PF	5%	50V
C097	1-102-823-00	CERAMIC	430PF	5%	50V
C098	1-102-820-00	CERAMIC	330PF	5%	50V
C099	1-102-525-00	CERAMIC	68PF	5%	50V
C101	1-108-595-00	MYLAR	0.047MF	5%	50V
C102	1-161-043-00	CERAMIC	0.0022MF	10%	25V
C103	1-106-172-00	MYLAR	0.001MF	5%	50V
C104	1-102-977-00	CERAMIC	200PF	5%	50V
C105	1-102-973-00	CERAMIC	100PF	5%	50V
C106	1-123-356-00	ELECT	10MF	20%	16V
C107	1-161-025-00	CERAMIC	0.1MF	10%	25V
C108	1-101-004-00	CERAMIC	0.01MF		50V
C111	1-102-816-00	CERAMIC	120PF	5%	50V
C112	1-101-004-00	CERAMIC	0.01MF		50V
C113	1-101-006-00	CERAMIC	0.047MF		50V
C114	1-102-973-00	CERAMIC	100PF	5%	50V
C116	1-101-004-00	CERAMIC	0.01MF		50V
C120	1-101-004-00	CERAMIC	0.01MF		50V
C121	1-101-004-00	CERAMIC	0.01MF		50V
C122	1-101-004-00	CERAMIC	0.01MF		50V
C123	1-101-004-00	CERAMIC	0.01MF		50V
C124	1-102-948-21	CERAMIC	11PF	5%	50V
C125	1-123-330-00	ELECT	22MF	20%	16V
C129	1-123-330-00	ELECT	22MF	20%	16V
C130	1-123-356-00	ELECT	10MF	20%	16V
C131	1-123-380-00	ELECT	1MF	20%	50V
C132	1-123-369-00	ELECT	4.7MF	20%	25V
C134	1-102-820-00	CERAMIC	330PF	5%	50V
C135	1-102-823-00	CERAMIC	430PF	5%	50V
C136	1-102-976-00	CERAMIC	180PF	5%	50V
C142	1-123-330-00	ELECT	22MF	20%	16V
C144	1-102-508-00	CERAMIC	10PF	0.5PF	50V
C145	1-102-521-00	CERAMIC	43PF	5%	50V
C146	1-102-521-00	CERAMIC	43PF	5%	50V
C147	1-102-508-00	CERAMIC	10PF	0.5PF	50V
C148	1-101-006-00	CERAMIC	0.047MF		50V
C155	1-101-004-00	CERAMIC	0.01MF		50V
C156	1-101-004-00	CERAMIC	0.01MF		50V
C159	1-102-822-00	CERAMIC	390PF	5%	50V
C177	1-101-361-00	CERAMIC	150PF	5%	50V
C178	1-123-307-00	ELECT	100MF	20%	10V
C179	1-123-307-00	ELECT	100MF	20%	10V
C180	1-123-332-00	ELECT	47MF	20%	16V
C183	1-101-006-00	CERAMIC	0.047MF		50V
C191	1-101-004-00	CERAMIC	0.01MF		50V
C192	1-123-330-00	ELECT	22MF	20%	16V
C196	1-123-380-00	ELECT	1MF	20%	50V
C197	1-123-356-00	ELECT	10MF	20%	16V
C200	1-101-004-00	CERAMIC	0.01MF		50V
C203	1-101-004-00	CERAMIC	0.01MF		50V
C204	1-123-369-00	ELECT	4.7MF	20%	25V
C206	1-101-004-00	CERAMIC	0.01MF		50V
C207	1-161-025-00	CERAMIC	0.1MF	10%	25V
C208	1-123-356-00	ELECT	10MF	20%	16V
C212	1-123-333-00	ELECT	100MF	20%	16V
C217	1-101-006-00	CERAMIC	0.047MF		50V
C219	1-123-356-00	ELECT	10MF	20%	16V
C220	1-101-006-00	CERAMIC	0.047MF		50V
C232	1-101-004-00	CERAMIC	0.01MF		50V (E MODEL)
C233	1-123-380-00	ELECT	1MF	20%	50V (E MODEL)
C248	1-101-006-00	CERAMIC	0.047MF		50V
C251	1-101-006-00	CERAMIC	0.047MF		50V
C252	1-102-816-00	CERAMIC	120PF	5%	50V
C253	1-123-356-00	ELECT	10MF	20%	16V
C257	1-101-006-00	CERAMIC	0.047MF		50V
C261	1-123-330-00	ELECT	22MF	20%	16V
C300	1-101-004-00	CERAMIC	0.01MF		50V (ES MODEL)
C301	1-101-006-00	CERAMIC	0.047MF		50V
C302	1-102-773-00	CERAMIC	330PF	5%	50V
C303	1-161-047-00	CERAMIC	0.0047MF	10%	25V
C401	1-123-381-00	ELECT	2.2MF	20%	50V
C402	1-101-001-00	CERAMIC	0.001MF		50V
C403	1-101-001-00	CERAMIC	0.001MF		50V
C404	1-101-004-00	CERAMIC	0.01MF		50V
C405	1-123-330-00	ELECT	22MF	20%	16V
C406	1-123-330-00	ELECT	22MF	20%	16V
C407	1-102-962-00	CERAMIC	30PF	5%	50V
C408	1-101-888-00	CERAMIC	68PF	5%	50V
C409	1-123-381-00	ELECT	2.2MF	20%	50V
C410	1-102-936-00	CERAMIC	3PF	0.25PF	50V
C411	1-101-005-00	CERAMIC	0.022MF		50V
C412	1-123-318-00	ELECT	33MF	20%	16V
C414	1-123-356-00	ELECT	10MF	20%	16V
C417	1-102-965-00	CERAMIC	39PF	5%	50V
C418	1-101-884-00	CERAMIC	56PF	5%	50V
C419	1-123-356-00	ELECT	10MF	20%	16V
C420	1-123-369-00	ELECT	4.7MF	20%	25V
C501	1-101-004-00	CERAMIC	0.01MF		50V
C502	1-101-004-00	CERAMIC	0.01MF		50V
C503	1-101-004-00	CERAMIC	0.01MF		50V
C504	1-161-055-00	CERAMIC	0.022MF	10%	25V
C505	1-102-822-00	CERAMIC	390PF	5%	50V
C506	1-101-006-00	CERAMIC	0.047MF		50V
C507	1-123-330-00	ELECT	22MF	20%	16V
C613	1-101-004-00	CERAMIC	0.01MF		50V (ES MODEL)
C701	1-102-530-00	CERAMIC	120PF	5%	50V
C702	1-123-380-00	ELECT	1MF	20%	50V
C703	1-123-380-00	ELECT	1MF	20%	50V
C704	1-123-380-00	ELECT	1MF	20%	50V
C705	1-123-380-00	ELECT	1MF	20%	50V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
C720	1-101-004-00	CERAMIC	0.01MF		50V
C721	1-123-356-00	ELECT	10MF	20%	16V
C722	1-123-369-00	ELECT	4.7MF	20%	25V
C723	1-161-057-00	CERAMIC	0.033MF	10%	25V
C731	1-101-004-00	CERAMIC	0.01MF		50V
C732	1-101-004-00	CERAMIC	0.01MF		50V
C733	1-101-004-00	CERAMIC	0.01MF		50V
C734	1-101-004-00	CERAMIC	0.01MF		50V
C740	1-101-004-00	CERAMIC	0.01MF		50V
C741	1-101-006-00	CERAMIC	0.047MF		50V
C743	1-102-904-00	CERAMIC	110PF	5%	50V
C744	1-123-330-00	ELECT	22MF	20%	16V
C745	1-102-518-00	CERAMIC	33PF	5%	50V
C746	1-101-974-00	CERAMIC	20PF	5%	50V
C751	1-123-330-00	ELECT	22MF	20%	16V
C752	1-101-004-00	CERAMIC	0.01MF		50V
C755	1-123-330-00	ELECT	22MF	20%	16V
C756	1-101-004-00	CERAMIC	0.01MF		50V
C757	1-123-330-00	ELECT	22MF	20%	16V
C758	1-101-004-00	CERAMIC	0.01MF		50V
C759	1-101-006-00	CERAMIC	0.047MF		50V
C760	1-101-006-00	CERAMIC	0.047MF		50V (ES MODEL)
C761	1-102-128-21	CERAMIC	0.0082MF	10%	50V
C762	1-102-824-00	CERAMIC	470PF	5%	50V
C763	1-123-330-00	ELECT	22MF	20%	16V
C765	1-123-356-00	ELECT	10MF	20%	16V
C766	1-102-973-00	CERAMIC	100PF	5%	50V
C767	1-123-330-00	ELECT	22MF	20%	16V
C768	1-124-343-00	ELECT	2200MF	20%	16V
C769	1-161-013-00	CERAMIC	0.01MF	10%	25V
C770	1-102-525-00	CERAMIC	68PF	5%	50V
C771	1-123-356-00	ELECT	10MF	20%	16V
C772	1-123-356-00	ELECT	10MF	20%	16V
C773	1-123-356-00	ELECT	10MF	20%	16V
C774	1-102-516-00	CERAMIC	27PF	5%	50V
C775	1-102-118-00	CERAMIC	0.0012MF	10%	50V
C777	1-161-025-00	CERAMIC	0.1MF	10%	25V
C778	1-102-516-00	CERAMIC	27PF	5%	50V
C801	1-102-865-00	CERAMIC	8PF	0.5PF	50V
C802	1-101-004-00	CERAMIC	0.01MF		50V
C803	1-123-330-00	ELECT	22MF	20%	16V
C804	1-123-306-00	ELECT	47MF	20%	6.3V
C805	1-101-001-00	CERAMIC	0.001MF		50V
C807	1-101-006-00	CERAMIC	0.047MF		50V
C809	1-101-004-00	CERAMIC	0.01MF		50V
C910	1-123-356-00	ELECT	10MF	20%	16V
C916	1-102-816-00	CERAMIC	120PF	5%	50V
C921	1-123-318-00	ELECT	33MF	20%	16V
C926	1-101-004-00	CERAMIC	0.01MF		50V
C927	1-161-025-00	CERAMIC	0.1MF	10%	25V
C928	1-161-025-00	CERAMIC	0.1MF	10%	25V
C929	1-123-330-00	ELECT	22MF	20%	16V
C930	1-123-356-00	ELECT	10MF	20%	16V

Ref.No	Part No.	Description			Remark
C931	1-123-356-00	ELECT	10MF	20%	16V
C932	1-124-475-11	ELECT	470MF	20%	16V
C933	1-123-356-00	ELECT	10MF	20%	16V
C934	1-123-356-00	ELECT	10MF	20%	16V
C935	1-124-473-11	ELECT	1000MF	20%	10V
C936	1-123-332-00	ELECT	47MF	20%	16V
C937	1-101-004-00	CERAMIC	0.01MF		50V
C943	1-123-356-00	ELECT	10MF	20%	16V
C944	1-123-333-00	ELECT	100MF	20%	16V
C945	1-124-473-11	ELECT	1000MF	20%	10V
C947	1-101-004-00	CERAMIC	0.01MF		50V
C951	1-101-004-00	CERAMIC	0.01MF		50V
C952	1-123-332-00	ELECT	47MF	20%	16V
C957	1-123-356-00	ELECT	10MF	20%	16V
C962	1-123-330-00	ELECT	22MF	20%	16V

FILTER

CF001	1-527-998-00	FILTER, CERAMIC	(ES MODEL)
CF002	1-527-875-00	FILTER, CERAMIC	
CF003	1-527-849-00	FILTER, CERAMIC	

CONNECTOR

CN001	*1-560-896-00	PIN, CONNECTOR 8P
CN002	*1-564-030-00	PIN, CONNECTOR 5P
CN003	*1-560-893-00	PIN, CONNECTOR 5P
CN004	*1-564-031-00	PIN, CONNECTOR 6P
CN005	*1-564-028-00	PIN, CONNECTOR 3P
CN006	*1-564-028-00	PIN, CONNECTOR 3P
CN007	*1-564-031-00	PIN, CONNECTOR 6P
CN008	*1-564-037-11	PIN, CONNECTOR 12P
CN009	*1-560-898-00	PIN, CONNECTOR 10P
CN010	*1-564-037-11	PIN, CONNECTOR 12P
CN011	*1-560-890-00	PIN, CONNECTOR 2P

JACK

CNJ001	1-536-936-21	CONNECTOR BOARD, BNC
CNJ003	1-561-534-00	SOCKET 21P

TRIMMER

CV001	1-141-275-00	CAP, TRIMMER

DIODE

D005	8-719-911-19	DIODE 1SS119	(ES MODEL)
D006	8-719-000-06	DIODE MC921	(ES MODEL)
D009	8-719-000-06	DIODE MC921	(ES MODEL)
D012	8-719-911-19	DIODE 1SS119	(ES MODEL)
D013	8-719-911-19	DIODE 1SS119	
D014	8-719-911-19	DIODE 1SS119	
D016	8-719-000-12	DIODE MC931	
D017	8-719-911-19	DIODE 1SS119	
D018	8-719-911-19	DIODE 1SS119	
D019	8-719-911-19	DIODE 1SS119	

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description	Remark
D020	8-719-911-19	DIODE 1SS119	
D021	8-719-911-19	DIODE 1SS119	
D022	8-719-911-19	DIODE 1SS119	
D025	8-719-911-19	DIODE 1SS119	
D027	8-719-000-06	DIODE MC921	
D029	8-719-100-56	DIODE RD10EB1	
D040	8-719-100-40	DIODE RD6.8EB1	
D190	8-719-911-19	DIODE 1SS119	
D703	8-719-911-19	DIODE 1SS119	
D704	8-719-911-19	DIODE 1SS119	
D705	8-719-911-19	DIODE 1SS119	
D706	8-719-911-19	DIODE 1SS119	
D707	8-719-911-19	DIODE 1SS119	
D801	8-719-911-19	DIODE 1SS119	
D802	8-719-911-19	DIODE 1SS119	
D803	8-719-911-19	DIODE 1SS119	
D804	8-719-911-19	DIODE 1SS119	
D805	8-719-911-19	DIODE 1SS119	
D806	8-719-911-19	DIODE 1SS119	
D809	8-719-911-19	DIODE 1SS119	
D810	8-719-911-19	DIODE 1SS119	
D811	8-719-102-88	DIODE RD9.1EN3	
D812	8-719-115-07	DIODE RD15E-B	
D813	8-719-100-71	DIODE RD15E-B2	
D814	8-719-911-19	DIODE 1SS119 (ES MODEL)	
D909	8-719-200-02	DIODE 10E-2	
D915	8-719-901-33	DIODE 1SS133	

DELAY LINE

Ref.No	Part No.	Description	Remark
DL001	1-415-313-00	DELAY LINE (1H)	
DL401	1-415-352-11	DELAY LINE, 1H	
DL501	1-415-419-21	DELAY LINE	

IC

Ref.No	Part No.	Description	Remark
IC001	8-759-909-20	IC BA634	
IC002	8-759-904-95	IC BA7007	
IC003	8-759-202-47	IC CX10023	
IC004	8-759-208-94	IC CX894	
IC005	8-752-006-10	IC CX20061	
IC006	8-759-203-99	IC CX10021B-NP	
IC009	8-759-101-62	IC CX20043	
IC011	8-752-006-10	IC CX20061	
IC020	8-759-045-38	IC MC14538BCP	
IC401	8-758-662-00	IC CX866B	
IC901	8-759-979-26	IC CX7926	

COIL

Ref.No	Part No.	Description	Remark
L001	1-410-450-11	MICRO INDUCTOR 3.9MMH	
L002	1-410-411-11	MICRO INDUCTOR 2.2UH	
L003	1-408-407-00	MICRO INDUCTOR 6.8UH	
L004	1-408-406-00	MICRO INDUCTOR 5.6UH	
L005	1-408-415-00	MICRO INDUCTOR 33UH	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
L006	1-408-426-00	MICRO INDUCTOR 270UH	
L007	1-408-427-00	MICRO INDUCTOR 330UH	
L008	1-408-421-00	MICRO INDUCTOR 100UH	
L009	1-408-417-00	MICRO INDUCTOR 47UH	
L011	1-408-423-00	MICRO INDUCTOR 150UH	
L012	1-408-409-00	MICRO INDUCTOR 10UH	
L014	1-408-422-00	MICRO INDUCTOR 120UH	
L016	1-408-409-00	MICRO INDUCTOR 10UH	
L017	1-408-423-00	MICRO INDUCTOR 150UH	
L021	1-408-421-00	MICRO INDUCTOR 100UH	
L022	1-408-422-00	MICRO INDUCTOR 120UH	
L023	1-408-421-00	MICRO INDUCTOR 100UH	
L036	1-408-429-00	MICRO INDUCTOR 470UH	
L050	1-408-414-00	MICRO INDUCTOR 27UH	
L051	1-408-417-00	MICRO INDUCTOR 47UH	
L052	1-408-419-00	MICRO INDUCTOR 68UH	
L053	1-408-423-00	MICRO INDUCTOR 150UH	
L055	1-408-409-00	MICRO INDUCTOR 10UH	
L060	1-408-429-00	MICRO INDUCTOR 470UH	
L061	1-408-414-00	MICRO INDUCTOR 27UH	
L062	1-408-419-00	MICRO INDUCTOR 68UH	
L401	1-408-397-00	MICRO INDUCTOR 1UH	
L402	1-408-397-00	MICRO INDUCTOR 1UH	
L501	1-408-408-00	MICRO INDUCTOR 8.2UH	
L701	1-408-415-00	MICRO INDUCTOR 33UH	
L720	1-410-122-11	MICRO INDUCTOR 1.8MMH	
L801	1-408-421-00	MICRO INDUCTOR 100UH	
L802	1-408-415-00	MICRO INDUCTOR 33UH	

FILTER

Ref.No	Part No.	Description	Remark
LPF001	1-235-097-00	FILTER, LOW PASS	

VARIABLE COIL

Ref.No	Part No.	Description	Remark
LV001	1-407-291-00	MICRO INDUCTOR 15MMH (ES MODEL)	
LV002	1-408-532-00	COIL, VARIABLE (ES MODEL)	
LV003	1-408-513-00	COIL (VARIABLE) (ES MODEL)	
LV501	1-408-512-00	COIL (VARIABLE)	

IC LINK

Ref.No	Part No.	Description	Remark
PS001⚠	1-532-685-00	LINK, IC	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q010	8-729-177-43	TRANSISTOR 2SD774	
Q011	8-729-204-83	TRANSISTOR 2SA1048	
Q014	8-729-113-33	TRANSISTOR 2SB733	
Q015	8-729-245-83	TRANSISTOR 2SC2458	
Q016	8-729-245-83	TRANSISTOR 2SC2458	
Q019	8-729-204-83	TRANSISTOR 2SA1048 (ES MODEL)	
Q020	8-729-204-83	TRANSISTOR 2SA1048	
Q021	8-729-245-83	TRANSISTOR 2SC2458 (ES MODEL)	
Q022	8-729-245-83	TRANSISTOR 2SC2458	
Q023	8-729-245-83	TRANSISTOR 2SC2458	

Ref.No	Part No.	Description	Remark
Q024	8-729-204-83	TRANSISTOR 2SA1048	
Q025	8-729-900-85	TRANSISTOR DTC144WS (ES MODEL)	
Q026	8-729-204-83	TRANSISTOR 2SA1048	
Q027	8-729-204-83	TRANSISTOR 2SA1048 (ES MODEL)	
Q028	8-729-245-83	TRANSISTOR 2SC2458	
Q029	8-729-245-83	TRANSISTOR 2SC2458 (ES MODEL)	
Q030	8-729-245-83	TRANSISTOR 2SC2458	
Q031	8-729-900-36	TRANSISTOR DTC124ES	
Q033	8-729-245-83	TRANSISTOR 2SC2458	
Q034	8-729-245-83	TRANSISTOR 2SC2458	
Q035	8-729-900-80	TRANSISTOR DTC114ES	
Q036	8-729-245-83	TRANSISTOR 2SC2458	
Q037	8-729-204-83	TRANSISTOR 2SA1048	
Q038	8-729-384-46	TRANSISTOR 2SA844	
Q039	8-729-603-30	TRANSISTOR 2SC403SP	
Q040	8-729-603-30	TRANSISTOR 2SC403SP	
Q041	8-729-384-46	TRANSISTOR 2SA844	
Q048	8-729-603-30	TRANSISTOR 2SC403SP	
Q049	8-729-603-30	TRANSISTOR 2SC403SP	
Q050	8-729-603-30	TRANSISTOR 2SC403SP	
Q051	8-729-384-46	TRANSISTOR 2SA844	
Q056	8-729-245-83	TRANSISTOR 2SC2458	
Q061	8-729-245-83	TRANSISTOR 2SC2458	
Q068	8-729-245-83	TRANSISTOR 2SC2458	
Q070	8-729-245-83	TRANSISTOR 2SC2458	
Q071	8-729-245-83	TRANSISTOR 2SC2458	
Q076	8-729-204-83	TRANSISTOR 2SA1048 (E MODEL)	
Q077	8-729-245-83	TRANSISTOR 2SC2458 (E MODEL)	
Q080	8-729-245-83	TRANSISTOR 2SC2458	
Q100	8-729-900-85	TRANSISTOR DTC144WS	
Q101	8-729-900-89	TRANSISTOR DTC144ES	
Q102	8-729-900-65	TRANSISTOR DTA144ES	
Q103	8-729-245-83	TRANSISTOR 2SC2458	
Q401	8-729-245-83	TRANSISTOR 2SC2458	
Q501	8-729-245-83	TRANSISTOR 2SC2458	
Q502	8-729-245-83	TRANSISTOR 2SC2458	
Q503	8-729-245-83	TRANSISTOR 2SC2458	
Q504	8-729-245-83	TRANSISTOR 2SC2458	
Q620	8-729-204-83	TRANSISTOR 2SA1048 (ES MODEL)	
Q701	8-729-245-83	TRANSISTOR 2SC2458	
Q702	8-729-900-89	TRANSISTOR DTC144ES	
Q703	8-729-204-83	TRANSISTOR 2SA1048	
Q704	8-729-900-89	TRANSISTOR DTC144ES	
Q707	8-729-900-89	TRANSISTOR DTC144ES	
Q709	8-729-900-36	TRANSISTOR DTC124ES	
Q715	8-729-245-83	TRANSISTOR 2SC2458	
Q716	8-729-245-83	TRANSISTOR 2SC2458	
Q717	8-729-245-83	TRANSISTOR 2SC2458	
Q720	8-729-900-89	TRANSISTOR DTC144ES	
Q721	8-729-900-89	TRANSISTOR DTC144ES	
Q806	8-729-245-83	TRANSISTOR 2SC2458 (ES MODEL)	
Q810	8-729-900-89	TRANSISTOR DTC144ES	
Q811	8-729-900-89	TRANSISTOR DTC144ES	

Ref.No	Part No.	Description	Remark
Q812	8-729-900-89	TRANSISTOR DTC144ES	
Q813	8-729-900-89	TRANSISTOR DTC144ES	
Q814	8-729-900-89	TRANSISTOR DTC144ES	
Q815	8-729-900-89	TRANSISTOR DTC144ES	
Q816	8-729-603-30	TRANSISTOR 2SC403SP	
Q817	8-729-603-30	TRANSISTOR 2SC403SP	
Q818	8-729-603-30	TRANSISTOR 2SC403SP	
Q819	8-729-603-30	TRANSISTOR 2SC403SP	
Q820	8-729-603-30	TRANSISTOR 2SC403SP	
Q821	8-729-204-83	TRANSISTOR 2SA1048	
Q822	8-729-245-83	TRANSISTOR 2SC2458	
Q823	8-729-204-83	TRANSISTOR 2SA1048	
Q824	8-729-245-83	TRANSISTOR 2SC2458	
Q825	8-729-603-30	TRANSISTOR 2SC403SP	
Q826	8-729-900-89	TRANSISTOR DTC144ES	
Q827	8-729-245-83	TRANSISTOR 2SC2458	
Q832	8-729-603-30	TRANSISTOR 2SC403SP	
Q833	8-729-603-30	TRANSISTOR 2SC403SP	
Q834	8-729-900-80	TRANSISTOR DTC114ES	
Q837	8-729-384-46	TRANSISTOR 2SA844	
Q838	8-729-245-83	TRANSISTOR 2SC2458	
Q839	8-729-245-83	TRANSISTOR 2SC2458	
Q840	8-729-603-30	TRANSISTOR 2SC403SP	
Q842	8-729-900-36	TRANSISTOR DTC124ES	
Q905	8-729-177-43	TRANSISTOR 2SD774	
Q906	8-729-204-83	TRANSISTOR 2SA1048	
Q910	8-729-900-36	TRANSISTOR DTC124ES	
Q921	8-729-204-83	TRANSISTOR 2SA1048	
Q922	8-729-900-36	TRANSISTOR DTC124ES	
Q923	8-729-245-83	TRANSISTOR 2SC2458	
Q925	8-729-245-83	TRANSISTOR 2SC2458	
Q926	8-729-900-89	TRANSISTOR DTC144ES	
Q928	8-729-245-83	TRANSISTOR 2SC2458	
		RESISTOR	
R032	1-247-831-00	CARBON 1K 5% 1/6W	
R035	1-247-859-00	CARBON 15K 5% 1/6W	
R038	1-247-837-00	CARBON 1.8K 5% 1/6W	
R039 ⚠	1-212-857-00	FUSIBLE 10 5% 1/4W F	
R046	1-249-419-11	CARBON 1.5K 5% 1/6W(ES MODEL)	
R048	1-247-847-00	CARBON 4.7K 5% 1/6W(ES MODEL)	
R050	1-247-853-00	CARBON 8.2K 5% 1/6W	
R051	1-247-821-00	CARBON 390 5% 1/6W	
R052	1-247-819-00	CARBON 330 5% 1/6W	
R053	1-247-843-00	CARBON 3.3K 5% 1/6W	
R054	1-247-847-00	CARBON 4.7K 5% 1/6W	
R055	1-247-849-00	CARBON 5.6K 5% 1/6W(ES MODEL)	
R056	1-247-867-00	CARBON 33K 5% 1/6W	
R058	1-247-873-00	CARBON 56K 5% 1/6W	
R059	1-247-863-00	CARBON 22K 5% 1/6W	
R060	1-247-867-00	CARBON 33K 5% 1/6W	
R061	1-249-429-11	CARBON 10K 5% 1/6W	
R062	1-249-429-11	CARBON 10K 5% 1/6W	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description				Remark
R063	1-247-841-00	CARBON	2.7K	5%	1/6W	
R064	1-247-848-00	CARBON	5.1K	5%	1/6W	
R065	1-247-889-00	CARBON	270K	5%	1/6W	
R066	1-247-870-00	CARBON	43K	5%	1/6W	
R067	1-247-862-00	CARBON	20K	5%	1/6W	
R068	1-247-838-00	CARBON	2K	5%	1/6W	
R069	1-247-831-00	CARBON	1K	5%	1/6W	
R070	1-247-831-00	CARBON	1K	5%	1/6W	
R071	1-247-851-00	CARBON	6.8K	5%	1/6W	
R072	1-247-841-00	CARBON	2.7K	5%	1/6W	
R073	1-247-831-00	CARBON	1K	5%	1/6W	
R074	1-247-831-00	CARBON	1K	5%	1/6W	
R075	1-247-815-00	CARBON	220	5%	1/6W	
R076	1-249-429-11	CARBON	10K	5%	1/6W	
R079	1-249-429-11	CARBON	10K	5%	1/6W	(ES MODEL)
R080	1-247-853-00	CARBON	8.2K	5%	1/6W	(ES MODEL)
R081	1-247-843-00	CARBON	3.3K	5%	1/6W	
R082	1-249-437-11	CARBON	47K	5%	1/6W	
R083	1-249-414-11	CARBON	560	5%	1/6W	(ES MODEL)
R084	1-247-831-00	CARBON	1K	5%	1/6W	(ES MODEL)
R085	1-247-800-00	CARBON	51	5%	1/6W	(ES MODEL)
R086	1-249-414-11	CARBON	560	5%	1/6W	
R087	1-249-414-11	CARBON	560	5%	1/6W	
R088	1-247-807-00	CARBON	100	5%	1/6W	
R091	1-247-824-00	CARBON	510	5%	1/6W	(ES MODEL)
R092	1-247-785-00	CARBON	12	5%	1/6W	(ES MODEL)
R093	1-247-806-00	CARBON	91	5%	1/6W	(ES MODEL)
R094	1-249-437-11	CARBON	47K	5%	1/6W	
R096	1-247-879-00	CARBON	100K	5%	1/6W	(ES MODEL)
R097	1-247-881-00	CARBON	120K	5%	1/6W	(ES MODEL)
R098	1-247-891-00	CARBON	330K	5%	1/6W	
R100	1-247-869-00	CARBON	39K	5%	1/6W	(ES MODEL)
R101	1-247-867-00	CARBON	33K	5%	1/6W	(ES MODEL)
R103	1-247-831-00	CARBON	1K	5%	1/6W	
R104	1-249-421-11	CARBON	2.2K	5%	1/6W	
R105	1-247-829-00	CARBON	820	5%	1/6W	
R106	1-247-831-00	CARBON	1K	5%	1/6W	
R107	1-247-824-00	CARBON	510	5%	1/6W	
R108	1-249-421-11	CARBON	2.2K	5%	1/6W	
R109	1-247-867-00	CARBON	33K	5%	1/6W	
R111	1-247-851-00	CARBON	6.8K	5%	1/6W	
R112	1-247-851-00	CARBON	6.8K	5%	1/6W	
R113	1-247-843-00	CARBON	3.3K	5%	1/6W	
R114	1-247-828-00	CARBON	750	5%	1/6W	
R115	1-247-879-00	CARBON	100K	5%	1/6W	
R116	1-247-853-00	CARBON	8.2K	5%	1/6W	
R117	1-247-846-00	CARBON	4.3K	5%	1/6W	
R118	1-247-815-00	CARBON	220	5%	1/6W	
R119	1-247-847-00	CARBON	4.7K	5%	1/6W	
R120	1-247-831-00	CARBON	1K	5%	1/6W	
R121	1-247-831-00	CARBON	1K	5%	1/6W	
R122	1-249-421-11	CARBON	2.2K	5%	1/6W	
R125	1-247-831-00	CARBON	1K	5%	1/6W	

Ref.No	Part No.	Description				Remark
R126	1-247-831-00	CARBON	1K	5%	1/6W	
R127	1-249-419-11	CARBON	1.5K	5%	1/6W	
R128	1-247-831-00	CARBON	1K	5%	1/6W	
R129	1-247-867-00	CARBON	33K	5%	1/6W	
R130	1-247-843-00	CARBON	3.3K	5%	1/6W	
R131	1-247-841-00	CARBON	2.7K	5%	1/6W	
R132	1-247-887-00	CARBON	220K	5%	1/6W	
R133	1-247-807-00	CARBON	100	5%	1/6W	
R134	1-247-831-00	CARBON	1K	5%	1/6W	
R135	1-247-883-00	CARBON	150K	5%	1/6W	
R136	1-247-879-00	CARBON	100K	5%	1/6W	
R137	1-247-857-00	CARBON	12K	5%	1/6W	
R138	1-249-434-11	CARBON	27K	5%	1/6W	
R139	1-247-841-00	CARBON	2.7K	5%	1/6W	
R140	1-247-815-00	CARBON	220	5%	1/6W	
R141	1-247-831-00	CARBON	1K	5%	1/6W	
R142	1-247-842-00	CARBON	3K	5%	1/6W	
R143	1-247-833-00	CARBON	1.2K	5%	1/6W	
R144	1-247-824-00	CARBON	510	5%	1/6W	
R146	1-247-831-00	CARBON	1K	5%	1/6W	
R147	1-249-429-11	CARBON	10K	5%	1/6W	
R148	1-247-831-00	CARBON	1K	5%	1/6W	
R149	1-247-819-00	CARBON	330	5%	1/6W	
R150	1-247-863-00	CARBON	22K	5%	1/6W	
R151	1-247-812-00	CARBON	160	5%	1/6W	
R152	1-247-829-00	CARBON	820	5%	1/6W	
R153	1-247-863-00	CARBON	22K	5%	1/6W	
R154	1-247-821-00	CARBON	390	5%	1/6W	
R155	1-249-421-11	CARBON	2.2K	5%	1/6W	
R157	1-247-837-00	CARBON	1.8K	5%	1/6W	
R158	1-247-817-00	CARBON	270	5%	1/6W	
R159	1-247-813-00	CARBON	180	5%	1/6W	
R160	1-247-832-00	CARBON	1.1K	5%	1/6W	
R161	1-249-429-11	CARBON	10K	5%	1/6W	
R163	1-247-831-00	CARBON	1K	5%	1/6W	
R165	1-247-833-00	CARBON	1.2K	5%	1/6W	
R166	1-247-807-00	CARBON	100	5%	1/6W	
R171	1-247-901-00	CARBON	820K	5%	1/6W	
R172	1-247-857-00	CARBON	12K	5%	1/6W	
R173	1-247-861-00	CARBON	18K	5%	1/6W	
R174	1-249-421-11	CARBON	2.2K	5%	1/6W	
R175	1-247-831-00	CARBON	1K	5%	1/6W	
R176	1-249-421-11	CARBON	2.2K	5%	1/6W	
R178	1-249-421-11	CARBON	2.2K	5%	1/6W	
R179	1-247-843-00	CARBON	3.3K	5%	1/6W	
R181	1-249-419-11	CARBON	1.5K	5%	1/6W	
R182	1-247-819-00	CARBON	330	5%	1/6W	
R183	1-249-421-11	CARBON	2.2K	5%	1/6W	
R184	1-247-807-00	CARBON	100	5%	1/6W	
R185	1-247-843-00	CARBON	3.3K	5%	1/6W	
R189	1-249-414-11	CARBON	560	5%	1/6W	
R190	1-249-414-11	CARBON	560	5%	1/6W	
R192	1-247-831-00	CARBON	1K	5%	1/6W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R193	1-249-429-11	CARBON	10K	5%	1/6W	
R194	1-247-819-00	CARBON	330	5%	1/6W	
R195	1-247-812-00	CARBON	160	5%	1/6W	
R196	1-247-863-00	CARBON	22K	5%	1/6W	
R197	1-247-863-00	CARBON	22K	5%	1/6W	
R198	1-247-829-00	CARBON	820	5%	1/6W	
R199	1-247-821-00	CARBON	390	5%	1/6W	
R200	1-249-421-11	CARBON	2.2K	5%	1/6W	
R201	1-247-837-00	CARBON	1.8K	5%	1/6W	
R203	1-247-813-00	CARBON	180	5%	1/6W	
R204	1-247-817-00	CARBON	270	5%	1/6W	
R205	1-247-807-00	CARBON	100	5%	1/6W	
R206	1-247-831-00	CARBON	1K	5%	1/6W	
R207	1-247-873-00	CARBON	56K	5%	1/6W	
R208	1-247-873-00	CARBON	56K	5%	1/6W	
R214	1-247-831-00	CARBON	1K	5%	1/6W	
R215	1-247-831-00	CARBON	1K	5%	1/6W	
R216	1-247-819-00	CARBON	330	5%	1/6W	
R217	1-249-421-11	CARBON	2.2K	5%	1/6W	
R218	1-247-857-00	CARBON	12K	5%	1/6W	
R219	1-247-873-00	CARBON	56K	5%	1/6W	
R220	1-249-434-11	CARBON	27K	5%	1/6W	
R221	1-247-849-00	CARBON	5.6K	5%	1/6W	
R222	1-247-837-00	CARBON	1.8K	5%	1/6W	
R223	1-247-837-00	CARBON	1.8K	5%	1/6W	
R231	1-247-867-00	CARBON	33K	5%	1/6W	
R236	1-247-853-00	CARBON	8.2K	5%	1/6W	
R238	1-247-851-00	CARBON	6.8K	5%	1/6W	
R239	1-249-429-11	CARBON	10K	5%	1/6W	
R240	1-249-421-11	CARBON	2.2K	5%	1/6W	
R248	1-247-819-00	CARBON	330	5%	1/6W	
R274	1-247-883-00	CARBON	150K	5%	1/6W	
R275	1-249-437-11	CARBON	47K	5%	1/6W	
R276	1-247-849-00	CARBON	5.6K	5%	1/6W	
R277	1-249-429-11	CARBON	10K	5%	1/6W	
R280	1-249-419-11	CARBON	1.5K	5%	1/6W	
R281	1-247-890-00	CARBON	300K	5%	1/6W	
R282	1-247-819-00	CARBON	330	5%	1/6W	
R283	1-249-421-11	CARBON	2.2K	5%	1/6W	
R284	1-247-877-00	CARBON	82K	5%	1/6W	
R286	1-247-843-00	CARBON	3.3K	5%	1/6W	
R291	1-247-863-00	CARBON	22K	5%	1/6W	
R292	1-247-875-00	CARBON	68K	5%	1/6W	
R293	1-247-819-00	CARBON	330	5%	1/6W	
R295	1-249-421-11	CARBON	2.2K	5%	1/6W	
R298	1-247-894-00	CARBON	430K	5%	1/6W	
R299	1-247-892-00	CARBON	360K	5%	1/6W	
R301	1-249-429-11	CARBON	10K	5%	1/6W	
R302	1-247-819-00	CARBON	330	5%	1/6W	
R303	1-247-819-00	CARBON	330	5%	1/6W	
R304	1-247-847-00	CARBON	4.7K	5%	1/6W	
R312	1-247-879-00	CARBON	100K	5%	1/6W	
R313	1-247-823-00	CARBON	470	5%	1/6W	

Ref.No	Part No.	Description				Remark
R320	1-247-878-00	CARBON	91K	5%	1/6W	
R321	1-247-887-00	CARBON	220K	5%	1/6W	
R325	1-247-807-00	CARBON	100	5%	1/6W	
R331	1-247-852-00	CARBON	7.5K	5%	1/6W	
R342	1-247-807-00	CARBON	100	5%	1/6W	
R346	1-247-847-00	CARBON	4.7K	5%	1/6W	
R347	1-247-879-00	CARBON	100K	5%	1/6W	(E MODEL)
R351	1-247-815-00	CARBON	220	5%	1/6W	
R353	1-249-421-11	CARBON	2.2K	5%	1/6W	
R357	1-247-829-00	CARBON	820	5%	1/6W	
R370	1-247-797-00	CARBON	39	5%	1/6W	
R380	1-247-851-00	CARBON	6.8K	5%	1/6W	
R381	1-249-429-11	CARBON	10K	5%	1/6W	
R382	1-247-831-00	CARBON	1K	5%	1/6W	
R390	1-247-887-00	CARBON	220K	5%	1/6W	(E MODEL)
R401	1-247-810-00	CARBON	130	5%	1/6W	
R402	1-247-806-00	CARBON	91	5%	1/6W	
R403	1-247-867-00	CARBON	33K	5%	1/6W	
R404	1-249-437-11	CARBON	47K	5%	1/6W	
R405	1-247-831-00	CARBON	1K	5%	1/6W	
R406	1-247-832-00	CARBON	1.1K	5%	1/6W	
R407	1-247-832-00	CARBON	1.1K	5%	1/6W	
R408	1-247-849-00	CARBON	5.6K	5%	1/6W	
R409	1-247-831-00	CARBON	1K	5%	1/6W	
R413	1-247-829-00	CARBON	820	5%	1/6W	
R414	1-247-847-00	CARBON	4.7K	5%	1/6W	
R415	1-247-831-00	CARBON	1K	5%	1/6W	
R416	1-247-846-00	CARBON	4.3K	5%	1/6W	
R510	1-247-824-00	CARBON	510	5%	1/6W	
R511	1-247-867-00	CARBON	33K	5%	1/6W	
R512	1-247-847-00	CARBON	4.7K	5%	1/6W	
R513	1-247-863-00	CARBON	22K	5%	1/6W	
R514	1-247-821-00	CARBON	390	5%	1/6W	
R515	1-249-421-11	CARBON	2.2K	5%	1/6W	
R516	1-247-821-00	CARBON	390	5%	1/6W	
R517	1-247-821-00	CARBON	390	5%	1/6W	
R518	1-247-821-00	CARBON	390	5%	1/6W	
R519	1-247-821-00	CARBON	390	5%	1/6W	
R520	1-249-421-11	CARBON	2.2K	5%	1/6W	
R521	1-247-821-00	CARBON	390	5%	1/6W	
R522	1-249-421-11	CARBON	2.2K	5%	1/6W	
R525	1-247-843-00	CARBON	3.3K	5%	1/6W	
R603	1-247-843-00	CARBON	3.3K	5%	1/6W	
R607	1-249-429-11	CARBON	10K	5%	1/6W	(ES MODEL)
R638	1-247-807-00	CARBON	100	5%	1/6W	(ES MODEL)
R639	1-247-831-00	CARBON	1K	5%	1/6W	(ES MODEL)
R640	1-247-815-00	CARBON	220	5%	1/6W	(ES MODEL)
R641	1-247-823-00	CARBON	470	5%	1/6W	(ES MODEL)
R643	1-247-875-00	CARBON	68K	5%	1/6W	
R650	1-249-437-11	CARBON	47K	5%	1/6W	
R651	1-247-867-00	CARBON	33K	5%	1/6W	
R652	1-247-831-00	CARBON	1K	5%	1/6W	
R654	1-247-831-00	CARBON	1K	5%	1/6W	

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description				Remark
R655	1-247-831-00	CARBON	1K	5%	1/6W	
R656	1-249-414-11	CARBON	560	5%	1/6W	
R657	1-247-831-00	CARBON	1K	5%	1/6W	
R701	1-249-414-11	CARBON	560	5%	1/6W	
R702	1-249-421-11	CARBON	2.2K	5%	1/6W	
R703	1-247-867-00	CARBON	33K	5%	1/6W	
R704	1-247-813-00	CARBON	180	5%	1/6W	
R705	1-247-813-00	CARBON	180	5%	1/6W	
R710	1-249-429-11	CARBON	10K	5%	1/6W	
R712	1-249-419-11	CARBON	1.5K	5%	1/6W	
R714	1-247-827-00	CARBON	680	5%	1/6W	
R737	1-249-429-11	CARBON	10K	5%	1/6W	
R738	1-249-429-11	CARBON	10K	5%	1/6W	
R739	1-249-429-11	CARBON	10K	5%	1/6W	
R740	1-247-861-00	CARBON	18K	5%	1/6W	
R741	1-249-429-11	CARBON	10K	5%	1/6W	
R743	1-247-863-00	CARBON	22K	5%	1/6W	
R744	1-247-879-00	CARBON	100K	5%	1/6W	
R745	1-247-840-00	CARBON	2.4K	5%	1/6W	
R746	1-247-815-00	CARBON	220	5%	1/6W	
R747	1-247-857-00	CARBON	12K	5%	1/6W	
R748	1-249-421-11	CARBON	2.2K	5%	1/6W	
R749	1-247-815-00	CARBON	220	5%	1/6W	
R750	1-247-807-00	CARBON	100	5%	1/6W	
R753	1-249-429-11	CARBON	10K	5%	1/6W	
R754	1-249-421-11	CARBON	2.2K	5%	1/6W	
R778	1-247-861-00	CARBON	18K	5%	1/6W	
R802	1-247-831-00	CARBON	1K	5%	1/6W	
R803	1-249-437-11	CARBON	47K	5%	1/6W	
R804	1-249-437-11	CARBON	47K	5%	1/6W	
R805	1-247-883-00	CARBON	150K	5%	1/6W	
R806	1-247-883-00	CARBON	150K	5%	1/6W	
R807	1-247-829-00	CARBON	820	5%	1/6W	
R809	1-247-891-00	CARBON	330K	5%	1/6W(ES MODEL)	
R811	1-247-843-00	CARBON	3.3K	5%	1/6W	
R814	1-247-903-00	CARBON	1M	5%	1/6W	
R815	1-247-831-00	CARBON	1K	5%	1/6W	
R816	1-247-899-00	CARBON	680K	5%	1/6W	
R821	1-249-421-11	CARBON	2.2K	5%	1/6W(ES MODEL)	
R822	1-249-421-11	CARBON	2.2K	5%	1/6W(ES MODEL)	
R823	1-247-867-00	CARBON	33K	5%	1/6W	
R824	1-247-863-00	CARBON	22K	5%	1/6W	
R825	1-247-831-00	CARBON	1K	5%	1/6W	
R830	1-247-831-00	CARBON	1K	5%	1/6W	
R831	1-247-831-00	CARBON	1K	5%	1/6W	
R832	1-247-831-00	CARBON	1K	5%	1/6W	
R833	1-247-877-00	CARBON	82K	5%	1/6W	
R834	1-249-419-11	CARBON	1.5K	5%	1/6W	
R835	1-247-877-00	CARBON	82K	5%	1/6W	
R836	1-247-819-00	CARBON	330	5%	1/6W	
R837	1-247-819-00	CARBON	330	5%	1/6W	
R838	1-247-863-00	CARBON	22K	5%	1/6W	
R839	1-247-847-00	CARBON	4.7K	5%	1/6W	

Ref.No	Part No.	Description				Remark
R840	1-247-831-00	CARBON	1K	5%	1/6W	
R841	1-247-827-00	CARBON	680	5%	1/6W	
R843	1-247-827-00	CARBON	680	5%	1/6W	
R844	1-249-434-11	CARBON	27K	5%	1/6W	
R845	1-249-437-11	CARBON	47K	5%	1/6W	
R846	1-247-867-00	CARBON	33K	5%	1/6W	
R848	1-247-811-00	CARBON	150	5%	1/6W	
R849	1-247-803-00	CARBON	68	5%	1/6W	
R853	1-247-803-00	CARBON	68	5%	1/6W	
R854	1-247-804-00	CARBON	75	5%	1/6W	
R855	1-247-831-00	CARBON	1K	5%	1/6W	
R856	1-247-823-00	CARBON	470	5%	1/6W	
R867	1-247-853-00	CARBON	8.2K	5%	1/6W	
R870	1-247-818-00	CARBON	300	5%	1/6W	
R871	1-247-818-00	CARBON	300	5%	1/6W	
R872	1-249-414-11	CARBON	560	5%	1/6W	
R877	1-215-445-00	METAL	10K	1%	1/6W	
R878	1-215-433-00	METAL	3.3K	1%	1/6W	
R880	1-249-429-11	CARBON	10K	5%	1/6W	
R882	1-247-879-00	CARBON	100K	5%	1/6W	
R883	⚠.1-247-807-00	CARBON	100	5%	1/6W	
R884	1-247-847-00	CARBON	4.7K	5%	1/6W	
R885	1-247-817-00	CARBON	270	5%	1/6W	
R886	1-247-833-00	CARBON	1.2K	5%	1/6W	
R888	1-247-863-00	CARBON	22K	5%	1/6W	
R892	⚠.1-247-831-00	CARBON	1K	5%	1/6W	
R893	1-247-847-00	CARBON	4.7K	5%	1/6W	
R894	1-247-823-00	CARBON	470	5%	1/6W	
R895	1-247-823-00	CARBON	470	5%	1/6W	
R896	1-249-429-11	CARBON	10K	5%	1/6W	
R897	1-249-429-11	CARBON	10K	5%	1/6W	
R898	1-247-887-00	CARBON	220K	5%	1/6W	
R899	1-247-887-00	CARBON	220K	5%	1/6W	
R900	1-249-414-11	CARBON	560	5%	1/6W	
R902	1-247-857-00	CARBON	12K	5%	1/6W	
R903	1-247-801-00	CARBON	56	5%	1/6W	
R904	1-249-425-11	CARBON	4.7K	5%	1/6W	
R905	1-249-425-11	CARBON	4.7K	5%	1/6W	
R907	1-247-859-00	CARBON	15K	5%	1/6W	
R908	1-249-425-11	CARBON	4.7K	5%	1/6W	
R909	1-249-433-11	CARBON	22K	5%	1/6W	
R910	1-247-867-00	CARBON	33K	5%	1/6W	
R918	1-247-831-00	CARBON	1K	5%	1/6W	
R919	⚠.1-212-857-00	FUSIBLE	10	5%	1/4W	F
R920	1-249-419-11	CARBON	1.5K	5%	1/6W	
R921	1-247-857-00	CARBON	12K	5%	1/6W	
R922	1-247-859-00	CARBON	15K	5%	1/6W	
R926	1-247-863-00	CARBON	22K	5%	1/6W	
R935	1-247-843-00	CARBON	3.3K	5%	1/6W	
R950	1-247-830-00	CARBON	910	5%	1/6W	
R963	1-249-429-11	CARBON	10K	5%	1/6W	
R964	1-247-858-00	CARBON	13K	5%	1/6W	
R965	1-247-857-00	CARBON	12K	5%	1/6W	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R966	1-247-866-00	CARBON	30K	5%	1/6W	
R967	1-247-875-00	CARBON	68K	5%	1/6W	
R968	1-247-853-00	CARBON	8.2K	5%	1/6W	
R969	1-247-841-00	CARBON	2.7K	5%	1/6W	
R970	1-247-863-00	CARBON	22K	5%	1/6W	
R971	1-249-429-11	CARBON	10K	5%	1/6W	
R972	1-249-429-11	CARBON	10K	5%	1/6W	
R974	1-249-419-11	CARBON	1.5K	5%	1/6W	
R975	1-247-811-00	CARBON	150	5%	1/6W	
R976	1-247-809-00	CARBON	120	5%	1/6W	
R977	1-247-831-00	CARBON	1K	5%	1/6W	
R979	1-249-414-11	CARBON	560	5%	1/6W	
R980	1-247-867-00	CARBON	33K	5%	1/6W	
R981	1-247-853-00	CARBON	8.2K	5%	1/6W	
R982	1-247-853-00	CARBON	8.2K	5%	1/6W	
R983	1-247-792-00	CARBON	0	5%	1/6W	
R986	1-249-421-11	CARBON	2.2K	5%	1/6W	
R989	1-247-853-00	CARBON	8.2K	5%	1/6W	
R990	1-247-867-00	CARBON	33K	5%	1/6W	
R991	1-247-853-00	CARBON	8.2K	5%	1/6W	
R992	1-247-792-00	CARBON	0	5%	1/6W	
R995	1-247-803-00	CARBON	68	5%	1/6W	
R998	1-249-414-11	CARBON	560	5%	1/6W	

VARIABLE RESISTOR

RV001	1-228-989-00	RES, ADJ, METAL GLAZE 470	(ES MODEL)
RV002	1-228-994-00	RES, ADJ, CARBON 10K	
RV003	1-228-996-00	RES, ADJ, CARBON 47K	
RV004	1-228-990-00	RES, ADJ, METAL GLAZE 1K	
RV005	1-228-996-00	RES, ADJ, CARBON 47K	
RV006	1-228-995-00	RES, ADJ, CARBON 22K	
RV007	1-228-994-00	RES, ADJ, CARBON 10K	
RV008	1-228-991-00	RES, ADJ, CARBON 2.2K	
RV009	1-228-996-00	RES, ADJ, CARBON 47K	
RV010	1-228-995-00	RES, ADJ, CARBON 22K	
RV013	1-228-996-00	RES, ADJ, CARBON 47K	
RV014	1-228-994-00	RES, ADJ, CARBON 10K	
RV015	1-228-989-00	RES, ADJ, METAL GLAZE 470	
RV016	1-228-990-00	RES, ADJ, CARBON 1K	
RV019	1-228-993-00	RES, ADJ, METAL GLAZE 4.7K	
RV020	1-228-990-00	RES, ADJ, CARBON 1K	
RV021	1-228-996-00	RES, ADJ, CARBON 47K	
RV023	1-228-994-00	RES, ADJ, CARBON 10K	
RV024	1-228-996-00	RES, ADJ, CARBON 47K	
RV401	1-228-994-00	RES, ADJ, METAL GLAZE 10K	
RV501	1-228-989-00	RES, ADJ, CARBON 470	
RV702	1-228-995-00	RES, ADJ, CARBON 22K	

SWITCH

SW901	1-570-283-11	SWITCH, SLIDE

Ref.No	Part No.	Description	Remark

TRANSFORMER

T001	1-426-093-00	COIL, REC C BPT
T002	1-409-353-00	COIL, TRAP

CRYSTAL

X001	1-527-345-00	CRYSTAL, OSC

****

*A-6711-659-A RP-31 BOARD, COMPLETE
****

CAPACITOR

C703	1-161-013-00	CERAMIC	0.01MF	10%	25V
C704	1-123-647-00	ELECT	47MF	20%	6.3V
C705	1-131-345-00	TANTALUM	0.47MF	20%	35V
C706	1-130-495-00	MYLAR	0.1MF	5%	50V
C707	1-123-620-00	ELECT	10MF	20%	25V
C708	1-161-013-00	CERAMIC	0.01MF	10%	25V
C712	1-161-013-00	CERAMIC	0.01MF	10%	25V
C717	1-102-529-00	CERAMIC	100PF	5%	50V
C718	1-102-074-00	CERAMIC	0.001MF	10%	50V
C719	1-102-824-21	CERAMIC	470PF	5%	50V
C720	1-102-120-00	CERAMIC	0.0018MF	10%	50V
C721	1-102-518-00	CERAMIC	33PF	5%	50V
C722	1-102-516-00	CERAMIC	27PF	5%	50V
C723	1-123-822-00	ELECT	47MF	20%	10V
C724	1-123-620-00	ELECT	10MF	20%	25V
C725	1-130-495-00	MYLAR	0.1MF	5%	50V
C726	1-131-345-00	TANTALUM	0.47MF	20%	35V
C727	1-123-617-00	ELECT	10MF	20%	16V
C733	1-161-013-00	CERAMIC	0.01MF	10%	25V
C734	1-161-013-00	CERAMIC	0.01MF	10%	25V
C744	1-102-516-00	CERAMIC	27PF	5%	50V
C749	1-161-013-00	CERAMIC	0.01MF	10%	25V
C751	1-161-013-00	CERAMIC	0.01MF	10%	25V
C754	1-161-013-00	CERAMIC	0.01MF	10%	25V
C755	1-161-013-00	CERAMIC	0.01MF	10%	25V
C760	1-161-025-00	CERAMIC	0.1MF	10%	25V
C761	1-161-025-00	CERAMIC	0.1MF	10%	25V
C762	1-123-611-00	ELECT	1MF	20%	50V
C763	1-123-611-00	ELECT	1MF	20%	50V
C764	1-123-620-00	ELECT	10MF	20%	25V
C765	1-161-013-00	CERAMIC	0.01MF	10%	25V
C767	1-161-025-00	CERAMIC	0.1MF	10%	25V
C768	1-161-013-00	CERAMIC	0.01MF	10%	25V
C769	1-161-013-00	CERAMIC	0.01MF	10%	25V
C770	1-161-013-00	CERAMIC	0.01MF	10%	25V
C771	1-123-620-00	ELECT	10MF	20%	25V
C773	1-123-617-00	ELECT	10MF	20%	16V
C775	1-102-851-00	CERAMIC	15PF	5%	50V
C780	1-161-013-00	CERAMIC	0.01MF	10%	25V
C781	1-123-620-00	ELECT	10MF	20%	25V

When indicating parts by reference number, please include the board name.

RP-31

Ref.No	Part No.	Description			Remark
C782	1-161-013-00	CERAMIC	0.01MF	10%	25V
C784	1-161-013-00	CERAMIC	0.01MF	10%	25V
C791	1-161-013-00	CERAMIC	0.01MF	10%	25V
C792	1-123-620-00	ELECT	10MF	20%	25V
C801	1-123-822-00	ELECT	47MF	20%	10V
C802	1-123-611-00	ELECT	1MF	20%	50V
C803	1-161-013-00	CERAMIC	0.01MF	10%	25V
C805	1-161-013-00	CERAMIC	0.01MF	10%	25V
C807	1-102-865-00	CERAMIC	8PF	0.5PF	50V
C808	1-102-978-00	CERAMIC	220PF	5%	50V
C810	1-161-013-00	CERAMIC	0.01MF	10%	25V
C811	1-161-013-00	CERAMIC	0.01MF	10%	25V
C812	1-161-013-00	CERAMIC	0.01MF	10%	25V
C813	1-161-013-00	CERAMIC	0.01MF	10%	25V
C821	1-123-617-00	ELECT	10MF	20%	16V
C831	1-161-059-00	CERAMIC	0.047MF	10%	25V
C832	1-102-513-00	CERAMIC	18PF	5%	50V
C833	1-102-513-00	CERAMIC	18PF	5%	50V
C841	1-161-059-00	CERAMIC	0.047MF	10%	25V
C842	1-161-059-00	CERAMIC	0.047MF	10%	25V
C843	1-102-973-00	CERAMIC	100PF	5%	50V

CONNECTOR

CN701	*1-560-900-00	PIN, CONNECTOR 12P
CN702	*1-560-894-00	PIN, CONNECTOR 6P
CN703	*1-564-030-00	PIN, CONNECTOR 5P
CN704	*1-560-900-00	PIN, CONNECTOR 12P

DIODE

D701	8-719-911-19	DIODE 1SS119
D702	8-719-911-19	DIODE 1SS119

IC

IC701	8-752-004-50	IC CX20045
IC703	8-759-103-17	IC UPC1521HA
IC704	8-752-006-10	IC CX20061
IC705	8-759-200-60	IC TA7060AP

COIL

Ref.No	Part No.	Description
L701	1-408-876-00	MICRO INDUCTOR 0.18UH
L702	1-408-621-00	MICRO INDUCTOR 330UH
L703	1-408-429-00	MICRO INDUCTOR 470UH
L706	1-408-421-00	MICRO INDUCTOR 100UH
L709	1-408-616-21	MICRO INDUCTOR 120UH
L711	1-408-411-00	MICRO INDUCTOR 15UH
L712	1-408-878-00	MICRO INDUCTOR 0.33UH
L714	1-408-621-00	MICRO INDUCTOR 330UH
L716	1-408-429-00	MICRO INDUCTOR 470UH
L720	1-408-411-00	MICRO INDUCTOR 15UH
L721	1-408-429-00	MICRO INDUCTOR 470UH
L761	1-408-429-00	MICRO INDUCTOR 470UH
L762	1-408-429-00	MICRO INDUCTOR 470UH
L763	1-408-410-00	MICRO INDUCTOR 12UH
L764	1-408-429-00	MICRO INDUCTOR 470UH
L771	1-408-429-00	MICRO INDUCTOR 470UH
L772	1-408-403-00	MICRO INDUCTOR 3.3UH
L773	1-408-402-00	MICRO INDUCTOR 2.7UH
L774	1-408-429-00	MICRO INDUCTOR 470UH
L775	1-410-162-11	MICRO INDUCTOR 470UH
L801	1-408-415-00	MICRO INDUCTOR 33UH
L802	1-408-412-00	MICRO INDUCTOR 18UH

TRANSISTOR

Q703	8-729-245-83	TRANSISTOR 2SC2458
Q704	8-729-245-83	TRANSISTOR 2SC2458
Q705	8-729-245-83	TRANSISTOR 2SC2458
Q706	8-729-245-83	TRANSISTOR 2SC2458
Q707	8-729-603-30	TRANSISTOR 2SC403SP
Q761	8-729-245-83	TRANSISTOR 2SC2458

RESISTOR

					Remark
R534	1-247-833-00	CARBON	1.2K	5%	1/6W
R701	1-247-831-00	CARBON	1K	5%	1/6W
R704	1-247-857-00	CARBON	12K	5%	1/6W
R709	1-247-831-00	CARBON	1K	5%	1/6W
R712	1-247-831-00	CARBON	1K	5%	1/6W
R713	1-247-831-00	CARBON	1K	5%	1/6W
R717	1-249-419-11	CARBON	1.5K	5%	1/6W
R720	1-247-833-00	CARBON	1.2K	5%	1/6W
R722	1-247-829-00	CARBON	820	5%	1/6W
R745	1-247-807-00	CARBON	100	5%	1/6W
R748	1-249-419-11	CARBON	1.5K	5%	1/6W
R749	1-249-419-11	CARBON	1.5K	5%	1/6W
R752	1-249-429-11	CARBON	10K	5%	1/6W
R753	1-249-421-11	CARBON	2.2K	5%	1/6W
R754	1-247-815-00	CARBON	220	5%	1/6W
R755	1-247-849-00	CARBON	5.6K	5%	1/6W
R756	1-247-870-00	CARBON	43K	5%	1/6W
R757	1-249-429-11	CARBON	10K	5%	1/6W
R761	1-247-849-00	CARBON	5.6K	5%	1/6W
R762	1-247-870-00	CARBON	43K	5%	1/6W
R763	1-249-419-11	CARBON	1.5K	5%	1/6W
R764	1-247-833-00	CARBON	1.2K	5%	1/6W
R765	1-247-831-00	CARBON	1K	5%	1/6W
R771	1-247-819-00	CARBON	330	5%	1/6W
R772	1-247-821-00	CARBON	390	5%	1/6W
R801	1-247-797-00	CARBON	39	5%	1/6W
R803	1-247-823-00	CARBON	470	5%	1/6W
R806	1-247-845-00	CARBON	3.9K	5%	1/6W
R809	1-247-863-00	CARBON	22K	5%	1/6W
R810	1-247-863-00	CARBON	22K	5%	1/6W
R811	1-247-827-00	CARBON	680	5%	1/6W
R812	1-247-829-00	CARBON	820	5%	1/6W
R814	1-249-421-11	CARBON	2.2K	5%	1/6W
R815	1-249-421-11	CARBON	2.2K	5%	1/6W
R816	1-247-831-00	CARBON	1K	5%	1/6W

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
R817	1-247-831-00	CARBON	1K	5%	1/6W
R841	1-247-797-00	CARBON	39	5%	1/6W
R842	1-247-823-00	CARBON	470	5%	1/6W
R843	1-247-831-00	CARBON	1K	5%	1/6W

VARIABLE RESISTOR

Ref.No	Part No.	Description
RV701	1-228-920-00	RES, ADJ, CARBON 2.2K
RV702	1-228-920-00	RES, ADJ, CARBON 2.2K
RV704	1-228-920-00	RES, ADJ, CARBON 2.2K
RV706	1-228-919-00	RES, ADJ, CARBON 1K

TRANSFORMER

Ref.No	Part No.	Description
T701	1-448-300-11	TRANSFORMER, STEP UP

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*A-6711-660-A DH-4 BOARD, COMPLETE
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*3-683-631-01 CLAMP

CAPACITOR

Ref.No	Part No.	Description			Remark
C320	1-161-013-00	CERAMIC	0.01MF	10%	25V
C321	1-123-620-00	ELECT	10MF	20%	25V
C322	1-161-059-00	CERAMIC	0.047MF	10%	25V
C323	1-123-620-00	ELECT	10MF	20%	25V
C324	1-123-611-00	ELECT	1MF	20%	50V
C325	1-123-619-00	ELECT	4.7MF	20%	50V
C326	1-161-059-00	CERAMIC	0.047MF	10%	25V
C327	1-161-059-00	CERAMIC	0.047MF	10%	25V
C328	1-123-611-00	ELECT	1MF	20%	50V
C330	1-123-620-00	ELECT	10MF	20%	25V
C331	1-123-622-00	ELECT	22MF	20%	16V
C332	1-161-059-00	CERAMIC	0.047MF	10%	25V
C333	1-161-059-00	CERAMIC	0.047MF	10%	25V
C334	1-102-978-00	CERAMIC	220PF	5%	50V
C360	1-123-620-00	ELECT	10MF	20%	25V
C372	1-123-620-00	ELECT	10MF	20%	25V
C373	1-161-013-00	CERAMIC	0.01MF	10%	25V
C375	1-102-530-00	CERAMIC	120PF	5%	50V
C501	1-161-025-00	CERAMIC	0.1MF	10%	25V
C502	1-161-013-00	CERAMIC	0.01MF	10%	25V
C503	1-102-515-00	CERAMIC	24PF	5%	50V
C505	1-161-025-00	CERAMIC	0.1MF	10%	25V
C506	1-161-025-00	CERAMIC	0.1MF	10%	25V
C507	1-161-025-00	CERAMIC	0.1MF	10%	25V
C508	1-161-013-00	CERAMIC	0.01MF	10%	25V
C509	1-123-620-00	ELECT	10MF	20%	25V
C510	1-123-620-00	ELECT	10MF	20%	25V
C511	1-161-013-00	CERAMIC	0.01MF	10%	25V
C513	1-161-025-00	CERAMIC	0.1MF	10%	25V
C514	1-161-013-00	CERAMIC	0.01MF	10%	25V
C515	1-123-620-00	ELECT	10MF	20%	25V
C520	1-161-013-00	CERAMIC	0.01MF	10%	25V
C521	1-102-947-00	CERAMIC	10PF	5%	50V
C522	1-161-013-00	CERAMIC	0.01MF	10%	25V
C601	1-123-822-00	ELECT	47MF	20%	10V
C602	1-123-822-00	ELECT	47MF	20%	10V
C603	1-123-619-00	ELECT	4.7MF	20%	50V
C604	1-123-619-00	ELECT	4.7MF	20%	50V
C605	1-123-611-00	ELECT	1MF	20%	50V
C606	1-123-611-00	ELECT	1MF	20%	50V
C607	1-123-620-00	ELECT	10MF	20%	25V
C608	1-123-333-00	ELECT	100MF	20%	16V
C609	1-102-973-00	CERAMIC	100PF	5%	50V
C610	1-102-973-00	CERAMIC	100PF	5%	50V
C611	1-123-620-00	ELECT	10MF	20%	25V
C612	1-161-025-00	CERAMIC	0.1MF	10%	25V
C729	1-102-518-00	CERAMIC	33PF	5%	50V
C746	1-161-013-00	CERAMIC	0.01MF	10%	25V
C747	1-161-059-00	CERAMIC	0.047MF	10%	25V
C748	1-161-013-00	CERAMIC	0.01MF	10%	25V
C801	1-123-608-00	ELECT	0.22MF	20%	50V
C802	1-123-620-00	ELECT	10MF	20%	25V
C803	1-161-013-00	CERAMIC	0.01MF	10%	25V
C804	1-123-333-00	ELECT	100MF	20%	16V
C805	1-102-961-00	CERAMIC	27PF	5%	50V
C806	1-123-619-00	ELECT	4.7MF	20%	50V
C811	1-102-510-00	CERAMIC	12PF	5%	50V

CONNECTOR

Ref.No	Part No.	Description
CN501	*1-564-035-11	PIN, CONNECTOR 10P
CN504	*1-564-031-00	PIN, CONNECTOR 6P
CN505	*1-560-895-00	PIN, CONNECTOR 7P
CN506	*1-560-891-00	PIN, CONNECTOR 3P
CN507	*1-560-890-00	PIN, CONNECTOR 2P
CN508	*1-564-031-00	PIN, CONNECTOR 6P
CN509	*1-564-028-00	PIN, CONNECTOR 3P
CN510	*1-560-891-00	PIN, CONNECTOR 3P

DIODE

Ref.No	Part No.	Description
D310	8-719-911-19	DIODE 1SS119
D312	8-719-911-19	DIODE 1SS119
D313	8-719-911-19	DIODE 1SS119
D501	8-719-911-19	DIODE 1SS119
D601	8-719-911-19	DIODE 1SS119
D602	8-719-911-19	DIODE 1SS119
D603	8-719-911-19	DIODE 1SS119
D801	8-719-168-07	DIODE RD6.8E-B

IC

Ref.No	Part No.	Description
IC501	8-759-145-58	IC UPC4558C
IC601	8-759-745-56	IC NJM4556D

COIL

Ref.No	Part No.	Description
L301	1-407-510-00	MICRO INDUCTOR 33MMH
L302	1-408-429-00	MICRO INDUCTOR 470UH

When indicating parts by reference number, please include the board name.

DH-4

Ref.No	Part No.	Description	Remark
L303	1-408-429-00	MICRO INDUCTOR 470UH	
L304	1-408-417-00	MICRO INDUCTOR 47UH	
L503	1-408-415-00	MICRO INDUCTOR 33UH	
L504	1-408-420-00	MICRO INDUCTOR 82UH	
L510	1-408-411-00	MICRO INDUCTOR 15UH	
L715	1-408-408-00	MICRO INDUCTOR 8.2UH	
L765	1-408-429-00	MICRO INDUCTOR 470UH	
		TRANSISTOR	
Q301	8-729-603-30	TRANSISTOR 2SC403SP	
Q302	8-729-245-83	TRANSISTOR 2SC2458	
Q303	8-729-245-83	TRANSISTOR 2SC2458	
Q304	8-729-245-83	TRANSISTOR 2SC2458	
Q305	8-729-245-83	TRANSISTOR 2SC2458	
Q306	8-729-245-83	TRANSISTOR 2SC2458	
Q307	8-729-204-83	TRANSISTOR 2SA1048	
Q308	8-729-204-83	TRANSISTOR 2SA1048	
Q309	8-729-245-83	TRANSISTOR 2SC2458	
Q310	8-729-245-83	TRANSISTOR 2SC2458	
Q311	8-729-900-80	TRANSISTOR DTC114ES	
Q312	8-729-900-89	TRANSISTOR DTC144ES	
Q502	8-729-603-30	TRANSISTOR 2SC403SP	
Q503	8-729-603-30	TRANSISTOR 2SC403SP	
Q504	8-729-245-83	TRANSISTOR 2SC2458	
Q505	8-729-245-83	TRANSISTOR 2SC2458	
Q506	8-729-204-83	TRANSISTOR 2SA1048	
Q507	8-729-204-83	TRANSISTOR 2SA1048	
Q508	8-729-245-83	TRANSISTOR 2SC2458	
Q509	8-729-245-83	TRANSISTOR 2SC2458	
Q510	8-729-245-83	TRANSISTOR 2SC2458	
Q511	8-729-245-83	TRANSISTOR 2SC2458	
Q512	8-729-245-83	TRANSISTOR 2SC2458	
Q513	8-729-900-36	TRANSISTOR DTC124ES	
Q514	8-729-245-83	TRANSISTOR 2SC2458	
Q601	8-729-245-83	TRANSISTOR 2SC2458	
Q602	8-729-245-83	TRANSISTOR 2SC2458	
Q706	8-729-245-83	TRANSISTOR 2SC2458	
Q801	8-729-245-83	TRANSISTOR 2SC2458	
Q802	8-729-245-83	TRANSISTOR 2SC2458	
		RESISTOR	
R330	1-247-841-00	CARBON 2.7K 5% 1/6W	
R331	1-247-861-00	CARBON 18K 5% 1/6W	
R332	1-247-867-00	CARBON 33K 5% 1/6W	
R333	1-249-429-11	CARBON 10K 5% 1/6W	
R334	1-247-841-00	CARBON 2.7K 5% 1/6W	
R335	1-249-437-11	CARBON 47K 5% 1/6W	
R336	1-249-434-11	CARBON 27K 5% 1/6W	
R337	1-247-831-00	CARBON 1K 5% 1/6W	
R338	1-247-829-00	CARBON 820 5% 1/6W	
R339	1-247-831-00	CARBON 1K 5% 1/6W	
R340	1-215-413-00	METAL 470 1% 1/6W	
R341	1-215-433-00	METAL 3.3K 1% 1/6W	

Ref.No	Part No.	Description	Remark
R342	1-215-405-00	METAL 220 1% 1/6W	
R343	1-215-433-00	METAL 3.3K 1% 1/6W	
R344	1-215-451-00	METAL 18K 1% 1/6W	
R345	1-249-429-11	CARBON 10K 5% 1/6W	
R346	1-249-429-11	CARBON 10K 5% 1/6W	
R347	1-247-831-00	CARBON 1K 5% 1/6W	
R348	1-247-815-00	CARBON 220 5% 1/6W	
R349	1-249-429-11	CARBON 10K 5% 1/6W	
R350	1-249-429-11	CARBON 10K 5% 1/6W	
R351	1-247-895-00	CARBON 470K 5% 1/6W	
R354	1-247-879-00	CARBON 100K 5% 1/6W	
R357	1-247-857-00	CARBON 12K 5% 1/6W	
R358	1-247-831-00	CARBON 1K 5% 1/6W	
R361	1-247-807-00	CARBON 100 5% 1/6W	
R364	1-247-811-00	CARBON 150 5% 1/6W	
R365	1-249-429-11	CARBON 10K 5% 1/6W	
R366	1-249-429-11	CARBON 10K 5% 1/6W	
R367	1-249-421-11	CARBON 2.2K 5% 1/6W	
R368	1-247-831-00	CARBON 1K 5% 1/6W	
R369	1-249-429-11	CARBON 10K 5% 1/6W	
R371	1-247-831-00	CARBON 1K 5% 1/6W	
R501	1-249-434-11	CARBON 27K 5% 1/6W	
R502	1-247-859-00	CARBON 15K 5% 1/6W	
R503	1-247-831-00	CARBON 1K 5% 1/6W	
R505	1-247-823-00	CARBON 470 5% 1/6W	
R507	1-247-831-00	CARBON 1K 5% 1/6W	
R509	1-247-809-00	CARBON 120 5% 1/6W	
R510	1-247-831-00	CARBON 1K 5% 1/6W	
R511	1-247-809-00	CARBON 120 5% 1/6W	
R513	1-247-819-00	CARBON 330 5% 1/6W	
R514	1-247-831-00	CARBON 1K 5% 1/6W	
R515	1-247-819-00	CARBON 330 5% 1/6W	
R516	1-247-807-00	CARBON 100 5% 1/6W	
R519	1-247-799-00	CARBON 47 5% 1/6W	
R520	1-247-831-00	CARBON 1K 5% 1/6W	
R521	1-247-799-00	CARBON 47 5% 1/6W	
R522	1-247-863-00	CARBON 22K 5% 1/6W	
R523	1-215-445-00	METAL 10K 1% 1/6W	
R524	1-215-445-00	METAL 10K 1% 1/6W	
R525	1-215-445-00	METAL 10K 1% 1/6W	
R526	1-247-831-00	CARBON 1K 5% 1/6W	
R527	1-215-445-00	METAL 10K 1% 1/6W	
R528	1-247-889-00	CARBON 270K 5% 1/6W	
R529	1-215-469-00	METAL 100K 1% 1/6W	
R530	1-247-807-00	CARBON 100 5% 1/6W	
R531	1-247-807-00	CARBON 100 5% 1/6W	
R532	1-249-429-11	CARBON 10K 5% 1/6W	
R533	1-249-429-11	CARBON 10K 5% 1/6W	
R535	1-249-434-11	CARBON 27K 5% 1/6W	
R536	1-247-843-00	CARBON 3.3K 5% 1/6W	
R537	1-247-863-00	CARBON 22K 5% 1/6W	
R538	1-247-863-00	CARBON 22K 5% 1/6W	
R539	1-247-863-00	CARBON 22K 5% 1/6W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R562	1-247-811-00	CARBON	150	5%	1/6W	
R563	1-249-421-11	CARBON	2.2K	5%	1/6W	
R564	1-215-429-00	METAL	2.2K	1%	1/6W	
R601	1-247-799-00	CARBON	47	5%	1/6W	
R602	1-249-429-11	CARBON	10K	5%	1/6W	
R603	1-247-799-00	CARBON	47	5%	1/6W	
R604	1-247-867-00	CARBON	33K	5%	1/6W	
R605	1-247-867-00	CARBON	33K	5%	1/6W	
R606	1-247-877-00	CARBON	82K	5%	1/6W	
R607	1-247-887-00	CARBON	220K	5%	1/6W	
R608	1-247-877-00	CARBON	82K	5%	1/6W	
R609	1-249-429-11	CARBON	10K	5%	1/6W	
R611	1-247-887-00	CARBON	220K	5%	1/6W	
R612	1-247-887-00	CARBON	220K	5%	1/6W	
R613	1-249-429-11	CARBON	10K	5%	1/6W	
R614	1-247-863-00	CARBON	22K	5%	1/6W	
R680	1-247-887-00	CARBON	220K	5%	1/6W	
R724	1-247-817-00	CARBON	270	5%	1/6W	
R725	1-247-817-00	CARBON	270	5%	1/6W	
R728	1-249-414-11	CARBON	560	5%	1/6W	
R750	1-247-823-00	CARBON	470	5%	1/6W	
R752	1-247-858-00	CARBON	13K	5%	1/6W	
R753	1-247-823-00	CARBON	470	5%	1/6W	
R801	1-249-421-11	CARBON	2.2K	5%	1/6W	
R802	1-247-815-00	CARBON	220	5%	1/6W	
R803	1-247-847-00	CARBON	4.7K	5%	1/6W	
R804	1-247-887-00	CARBON	220K	5%	1/6W	
R805	1-247-879-00	CARBON	100K	5%	1/6W	
R806	1-247-831-00	CARBON	1K	5%	1/6W	
R807	1-247-823-00	CARBON	470	5%	1/6W	
R808	1-249-421-11	CARBON	2.2K	5%	1/6W	
R809	1-247-823-00	CARBON	470	5%	1/6W	

VARIABLE RESISTOR

Ref.No	Part No.	Description
RV301	1-228-990-00	RES, ADJ, CARBON 1K
RV302	1-228-991-00	RES, ADJ, CARBON 2.2K
RV303	1-228-989-00	RES, ADJ, CARBON 470
RV501	1-228-991-00	RES, ADJ, METAL GLAZE 2.2K

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AF-14 BOARD

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*A-6713-237-A B-697 BOARD, COMPLETE

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*3-683-631-01 CLAMP
*3-684-072-01 LID, BOTTOM, AF SHIELD CASE(S)
*3-684-087-01 CASE (S) (MAIN), SHIELD, AF

B.P.F

Ref.No	Part No.	Description
BPF001	1-235-367-11	B.P.F
BPF002	1-235-367-11	B.P.F
BPF003	1-235-366-11	B.P.F
BPF004	1-235-366-11	B.P.F

CAPACITOR

Ref.No	Part No.	Description			Remark
C001	1-123-318-00	ELECT	33MF	20%	16V
C002	1-161-025-00	CERAMIC	0.1MF	10%	25V
C003	1-161-025-00	CERAMIC	0.1MF	10%	25V
C004	1-161-025-00	CERAMIC	0.1MF	10%	25V
C005	1-101-004-00	CERAMIC	0.01MF		50V
C007	1-102-518-00	CERAMIC	33PF	5%	50V
C008	1-102-518-00	CERAMIC	33PF	5%	50V
C009	1-123-318-00	ELECT	33MF	20%	16V
C010	1-161-025-00	CERAMIC	0.1MF	10%	25V
C011	1-161-025-00	CERAMIC	0.1MF	10%	25V
C012	1-161-025-00	CERAMIC	0.1MF	10%	25V
C013	1-101-004-00	CERAMIC	0.01MF		50V
C015	1-102-822-00	CERAMIC	390PF	5%	50V
C016	1-102-822-00	CERAMIC	390PF	5%	50V
C017	1-123-380-00	ELECT	1MF	20%	50V
C018	1-101-361-00	CERAMIC	150PF	10%	50V
C019	1-123-380-00	ELECT	1MF	20%	50V
C020	1-161-025-00	CERAMIC	0.1MF	10%	25V
C021	1-101-004-00	CERAMIC	0.01MF		50V
C022	1-123-332-00	ELECT	47MF	20%	16V
C023	1-161-025-00	CERAMIC	0.1MF	10%	25V
C025	1-102-978-00	CERAMIC	220PF	5%	50V
C026	1-102-978-00	CERAMIC	220PF	5%	50V
C027	1-102-522-00	CERAMIC	51PF	5%	50V
C028	1-102-531-00	CERAMIC	150PF	5%	50V
C029	1-102-531-00	CERAMIC	150PF	5%	50V
C030	1-102-520-00	CERAMIC	39PF	5%	50V
C031	1-123-356-00	ELECT	10MF	20%	16V
C033	1-101-004-00	CERAMIC	0.01MF		50V
C034	1-101-004-00	CERAMIC	0.01MF		50V
C035	1-123-382-00	ELECT	3.3MF	20%	50V
C036	1-123-382-00	ELECT	3.3MF	20%	50V
C037	1-101-004-00	CERAMIC	0.01MF		50V
C038	1-123-332-00	ELECT	47MF	20%	16V
C039	1-101-004-00	CERAMIC	0.01MF		50V
C040	1-101-004-00	CERAMIC	0.01MF		50V
C041	1-101-004-00	CERAMIC	0.01MF		50V
C042	1-101-004-00	CERAMIC	0.01MF		50V
C043	1-123-356-00	ELECT	10MF	20%	16V
C044	1-101-004-00	CERAMIC	0.01MF		50V
C045	1-101-004-00	CERAMIC	0.01MF		50V
C046	1-101-004-00	CERAMIC	0.01MF		50V
C047	1-123-356-00	ELECT	10MF	20%	16V
C048	1-123-356-00	ELECT	10MF	20%	16V
C049	1-123-356-00	ELECT	10MF	20%	16V
C050	1-123-318-00	ELECT	33MF	20%	16V
C051	1-123-318-00	ELECT	33MF	20%	16V
C052	1-123-356-00	ELECT	10MF	20%	16V
C053	1-123-356-00	ELECT	10MF	20%	16V
C054	1-101-004-00	CERAMIC	0.01MF		50V

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description			Remark
C055	1-123-332-00	ELECT	47MF	20%	16V
C056	1-101-004-00	CERAMIC	0.01MF		50V
C057	1-101-004-00	CERAMIC	0.01MF		50V
C058	1-161-025-00	CERAMIC	0.1MF	10%	25V
C059	1-123-356-00	ELECT	10MF	20%	16V
C060	1-123-356-00	ELECT	10MF	20%	16V
C061	1-123-330-00	ELECT	22MF	20%	16V
C062	1-130-475-00	MYLAR	0.0022MF	5%	50V
C063	1-130-482-00	MYLAR	0.0082MF	5%	50V
C064	1-102-824-21	CERAMIC	470PF	5%	50V
C065	1-130-477-00	MYLAR	0.0033MF	5%	50V
C066	1-123-369-00	ELECT	4.7MF	20%	50V
C067	1-123-369-00	ELECT	4.7MF	20%	50V
C068	1-101-004-00	CERAMIC	0.01MF		50V
C069	1-123-333-00	ELECT	100MF	20%	16V
C070	1-123-356-00	ELECT	10MF	20%	16V
C071	1-123-332-00	ELECT	47MF	20%	16V
C072	1-123-332-00	ELECT	47MF	20%	16V
C073	1-102-958-00	CERAMIC	20PF	5%	50V
C074	1-130-485-00	MYLAR	0.015MF	5%	50V
C075	1-102-936-00	CERAMIC	3PF	0.25PF	50V
C076	1-130-485-00	MYLAR	0.015MF	5%	50V
C077	1-130-498-00	MYLAR	0.18MF	5%	50V
C078	1-130-485-00	MYLAR	0.015MF	5%	50V
C079	1-130-469-00	MYLAR	680PF	5%	50V
C080	1-130-475-00	MYLAR	0.0022MF	5%	50V
C081	1-102-936-00	CERAMIC	3PF	0.25PF	50V
C082	1-130-491-00	MYLAR	0.047MF	5%	50V
C083	1-123-330-00	ELECT	22MF	20%	16V
C084	1-130-493-00	MYLAR	0.068MF	5%	50V
C085	1-131-371-00	TANTALUM	10MF	10%	16V
C086	1-131-347-00	TANTALUM	1MF	10%	25V
C087	1-101-004-00	CERAMIC	0.01MF		50V
C088	1-123-333-00	ELECT	100MF	20%	16V
C096	1-123-356-00	ELECT	10MF	20%	16V
C100	1-123-356-00	ELECT	10MF	20%	16V
C101	1-123-332-00	ELECT	47MF	20%	16V
C102	1-123-332-00	ELECT	47MF	20%	16V
C103	1-123-381-00	ELECT	2.2MF	20%	50V
C104	1-123-332-00	ELECT	47MF	20%	16V
C105	1-123-356-00	ELECT	10MF	20%	16V
C106	1-123-356-00	ELECT	10MF	20%	16V
C107	1-123-332-00	ELECT	47MF	20%	16V
C108	1-123-356-00	ELECT	10MF	20%	16V
C109	1-123-356-00	ELECT	10MF	20%	16V
C110	1-123-380-00	ELECT	1MF	20%	50V
C111	1-123-318-00	ELECT	33MF	20%	16V
C112	1-123-379-00	ELECT	0.47MF	20%	50V
C113	1-123-356-00	ELECT	10MF	20%	16V
C114	1-123-356-00	ELECT	10MF	20%	16V
C115	1-123-369-00	ELECT	4.7MF	20%	50V
C116	1-123-330-00	ELECT	22MF	20%	16V
C117	1-123-330-00	ELECT	22MF	20%	16V
C118	1-102-961-00	CERAMIC	27PF	10%	50V
C119	1-102-961-00	CERAMIC	27PF	10%	50V
C120	1-123-369-00	ELECT	4.7MF	20%	50V
C121	1-123-356-00	ELECT	10MF	20%	16V
C122	1-123-356-00	ELECT	10MF	20%	16V
C123	1-130-471-00	MYLAR	0.001MF	5%	50V
C124	1-130-471-00	MYLAR	0.001MF	5%	50V
C125	1-123-356-00	ELECT	10MF	20%	16V
C126	1-123-356-00	ELECT	10MF	20%	16V
C127	1-123-356-00	ELECT	10MF	20%	16V
C128	1-123-356-00	ELECT	10MF	20%	16V
C129	1-123-356-00	ELECT	10MF	20%	16V
C130	1-123-356-00	ELECT	10MF	20%	16V
C131	1-123-356-00	ELECT	10MF	20%	16V
C132	1-123-356-00	ELECT	10MF	20%	16V
C133	1-123-356-00	ELECT	10MF	20%	16V
C134	1-123-330-00	ELECT	22MF	20%	16V
C135	1-123-332-00	ELECT	47MF	20%	16V
C136	1-123-330-00	ELECT	22MF	20%	16V
C137	1-123-356-00	ELECT	10MF	20%	16V
C138	1-123-356-00	ELECT	10MF	20%	16V
C139	1-123-330-00	ELECT	22MF	20%	16V
C140	1-123-356-00	ELECT	10MF	20%	16V
C141	1-123-356-00	ELECT	10MF	20%	16V
C142	1-123-332-00	ELECT	47MF	20%	16V
C143	1-123-330-00	ELECT	22MF	20%	16V
C144	1-123-330-00	ELECT	22MF	20%	16V
C145	1-123-356-00	ELECT	10MF	20%	16V
C146	1-123-330-00	ELECT	22MF	20%	16V
C147	1-123-330-00	ELECT	22MF	20%	16V
C148	1-123-356-00	ELECT	10MF	20%	16V
C149	1-123-356-00	ELECT	10MF	20%	16V
C150	1-123-356-00	ELECT	10MF	20%	16V
C151	1-130-478-00	MYLAR	0.0039MF	5%	50V
C152	1-130-476-00	MYLAR	0.0027MF	5%	50V
C153	1-130-474-00	MYLAR	0.0018MF	5%	50V
C154	1-130-478-00	MYLAR	0.0039MF	5%	50V
C155	1-130-476-00	MYLAR	0.0027MF	5%	50V
C156	1-130-474-00	MYLAR	0.0018MF	5%	50V
C157	1-131-347-00	TANTALUM	1MF	10%	25V
C158	1-131-371-00	TANTALUM	10MF	10%	16V
C159	1-130-493-00	MYLAR	0.068MF	5%	50V
C160	1-123-330-00	ELECT	22MF	20%	16V
C161	1-130-491-00	MYLAR	0.047MF	5%	50V
C162	1-102-936-00	CERAMIC	3PF	0.25PF	50V
C163	1-130-475-00	MYLAR	0.0022MF	5%	50V
C164	1-130-469-00	MYLAR	680PF	5%	50V
C165	1-130-485-00	MYLAR	0.015MF	5%	50V
C166	1-130-498-00	MYLAR	0.18MF	5%	50V
C167	1-130-485-00	MYLAR	0.015MF	5%	50V
C168	1-130-485-00	MYLAR	0.015MF	5%	50V
C169	1-102-958-00	CERAMIC	20PF	5%	50V
C170	1-123-332-00	ELECT	47MF	20%	16V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
C171	1-123-332-00	ELECT	47MF	20%	16V
C172	1-123-356-00	ELECT	10MF	20%	16V
C173	1-101-004-00	CERAMIC	0.01MF		50V
C174	1-123-333-00	ELECT	100MF	20%	16V
C175	1-101-004-00	CERAMIC	0.01MF		50V
C176	1-101-004-00	CERAMIC	0.01MF		50V
C177	1-123-356-00	ELECT	10MF	20%	16V
C178	1-123-356-00	ELECT	10MF	20%	16V
C179	1-123-356-00	ELECT	10MF	20%	16V
C180	1-123-318-00	ELECT	33MF	20%	16V
C181	1-123-318-00	ELECT	33MF	20%	16V
C182	1-123-356-00	ELECT	10MF	20%	16V
C183	1-123-356-00	ELECT	10MF	20%	16V
C184	1-123-381-00	ELECT	2.2MF	20%	50V
C185	1-123-380-00	ELECT	1MF	20%	50V
C186	1-123-380-00	ELECT	1MF	20%	50V
C187	1-101-004-00	CERAMIC	0.01MF		50V
C188	1-123-332-00	ELECT	47MF	20%	16V
C189	1-123-369-00	ELECT	4.7MF	20%	50V
C190	1-123-369-00	ELECT	4.7MF	20%	50V
C191	1-130-477-00	MYLAR	0.0033MF	5%	50V
C192	1-130-482-00	MYLAR	0.0082MF	5%	50V
C193	1-102-824-21	CERAMIC	470PF	5%	50V
C194	1-130-475-00	MYLAR	0.0022MF	5%	50V
C195	1-123-330-00	ELECT	22MF	20%	16V
C196	1-123-356-00	ELECT	10MF	20%	16V
C197	1-123-356-00	ELECT	10MF	20%	16V
C198	1-123-379-00	ELECT	0.47MF	20%	50V
C199	1-101-004-00	CERAMIC	0.01MF		50V
C200	1-101-004-00	CERAMIC	0.01MF		50V
C201	1-101-004-00	CERAMIC	0.01MF		50V
C202	1-101-004-00	CERAMIC	0.01MF		50V
C203	1-101-004-00	CERAMIC	0.01MF		50V
C204	1-101-004-00	CERAMIC	0.01MF		50V
C205	1-123-382-00	ELECT	3.3MF	20%	50V
C207	1-123-382-00	ELECT	3.3MF	20%	50V
C208	1-101-004-00	CERAMIC	0.01MF		50V
C209	1-101-004-00	CERAMIC	0.01MF		50V
C210	1-123-356-00	ELECT	10MF	20%	16V
C211	1-101-004-00	CERAMIC	0.01MF		50V
C212	1-123-356-00	ELECT	10MF	20%	16V
C213	1-161-025-00	CERAMIC	0.1MF	10%	25V
C214	1-123-332-00	ELECT	47MF	20%	16V
C215	1-123-333-00	ELECT	100MF	20%	16V
C216	1-161-025-00	CERAMIC	0.1MF	10%	25V
C217	1-123-333-00	ELECT	100MF	20%	16V
C218	1-102-936-00	CERAMIC	3PF	0.25PF	50V
C601	1-101-004-00	CERAMIC	0.01MF		50V
C602	1-101-004-00	CERAMIC	0.01MF		50V
C603	1-101-004-00	CERAMIC	0.01MF		50V
C604	1-101-004-00	CERAMIC	0.01MF		50V
C605	1-123-356-00	ELECT	10MF	20%	16V
C606	1-101-004-00	CERAMIC	0.01MF		50V

Ref.No	Part No.	Description			Remark
C607	1-123-617-00	ELECT	10MF	20%	16V
C608	1-123-333-00	ELECT	100MF	20%	16V
C609	1-101-004-00	CERAMIC	0.01MF		50V
C610	1-123-356-00	ELECT	10MF	20%	16V
C611	1-123-332-00	ELECT	47MF	20%	16V
C616	1-123-356-00	ELECT	10MF	20%	16V
C617	1-123-323-00	ELECT	470MF	20%	16V
C618	1-123-356-00	ELECT	10MF	20%	16V
C619	1-123-356-00	ELECT	10MF	20%	16V
C620	1-123-356-00	ELECT	10MF	20%	16V
C621	1-123-333-00	ELECT	100MF	20%	16V
C622	1-102-127-21	CERAMIC	0.0068MF	10%	50V
C623	1-102-127-21	CERAMIC	0.0068MF	10%	50V
C624	1-123-356-00	ELECT	10MF	20%	16V
C625	1-101-004-00	CERAMIC	0.01MF		50V
C626	1-123-380-00	ELECT	1MF	20%	50V
C629	1-130-495-00	MYLAR	0.1MF	5%	50V
C630	1-101-004-00	CERAMIC	0.01MF		50V
C631	1-123-332-00	ELECT	47MF	20%	16V
C632	1-123-380-00	ELECT	1MF	20%	50V
C633	1-101-004-00	CERAMIC	0.01MF		50V
C650	1-101-004-00	CERAMIC	0.01MF		50V
C651	1-101-004-00	CERAMIC	0.01MF		50V
C652	1-102-074-00	CERAMIC	0.001MF	10%	50V
C653	1-101-004-00	CERAMIC	0.01MF		50V
C654	1-101-004-00	CERAMIC	0.01MF		50V
C655	1-102-074-00	CERAMIC	0.001MF	10%	50V
C656	1-123-617-00	ELECT	10MF	20%	16V

CONNECTOR

Ref.No	Part No.	Description
CN001	*1-564-031-00	PIN, CONNECTOR 6P
CN002	*1-564-030-00	PIN, CONNECTOR 5P
CN003	*1-560-893-00	PIN, CONNECTOR 5P
CN004	*1-560-891-00	PIN, CONNECTOR 3P
CN005	*1-560-898-00	PIN, CONNECTOR 10P
CN006	*1-560-895-00	PIN, CONNECTOR 7P
CN007	*1-560-891-00	PIN, CONNECTOR 3P
CN008	*1-560-893-00	PIN, CONNECTOR 5P
CN009	*1-560-896-00	PIN, CONNECTOR 8P
CN010	*1-560-894-00	PIN, CONNECTOR 6P
CN011	*1-560-893-00	PIN, CONNECTOR 5P
CN012	*1-560-896-00	PIN, CONNECTOR 8P
CN013	*1-560-894-00	PIN, CONNECTOR 6P
CN014	*1-560-897-00	PIN, CONNECTOR 9P
CN015	*1-564-029-00	PIN, CONNECTOR 4P
CN016	*1-560-890-00	PIN, CONNECTOR 2P

DIODE

Ref.No	Part No.	Description
D001	8-719-911-19	DIODE 1SS119
D002	8-719-911-19	DIODE 1SS119
D003	8-719-911-19	DIODE 1SS119
D004	8-719-911-19	DIODE 1SS119
D005	8-719-911-19	DIODE 1SS119

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description	Remark
D006	8-719-911-19	DIODE 1SS119	
D007	8-719-911-19	DIODE 1SS119	
D008	8-719-000-04	DIODE MC911	
D010	8-719-000-12	DIODE MC931	
D013	8-719-911-19	DIODE 1SS119	
D014	8-719-911-19	DIODE 1SS119	
D015	8-719-000-06	DIODE MC921	
D016	8-719-911-19	DIODE 1SS119	
D017	8-719-911-19	DIODE 1SS119	
D018	8-719-911-19	DIODE 1SS119	
D019	8-719-911-19	DIODE 1SS119	
D020	8-719-000-12	DIODE MC931	
D022	8-719-101-61	DIODE RD6.2EL2	
D023	8-719-911-19	DIODE 1SS119	
D024	8-719-000-06	DIODE MC921	
D025	8-719-000-06	DIODE MC921	
D026	8-719-000-12	DIODE MC931	
D027	8-719-911-19	DIODE 1SS119	
D029	8-719-102-73	DIODE RD6.2EN1	
D601	8-719-911-19	DIODE 1SS119	
D602	8-719-911-19	DIODE 1SS119	
D603	8-719-911-19	DIODE 1SS119	
D604	8-719-911-19	DIODE 1SS119	
D606	8-719-911-19	DIODE 1SS119	
D607	8-719-911-19	DIODE 1SS119	
D608	8-719-911-19	DIODE 1SS119	
D609	8-719-101-86	DIODE RD13EL2	
D610	8-719-911-19	DIODE 1SS119	
D611	8-719-000-06	DIODE MC921	

IC

Ref.No	Part No.	Description	Remark
IC001	8-752-010-40	IC CX20104	
IC002	8-752-010-50	IC CX20105	
IC003	8-752-009-71	IC CX20097A	
IC004	8-752-010-50	IC CX20105	
IC007	8-759-240-66	IC TC4066BP	
IC009	8-759-700-62	IC NJM4562D	
IC010	8-759-240-66	IC TC4066BP	
IC011	8-759-922-43	IC TK15052D	
IC012	8-759-915-48	IC TK15011Z	
IC013	8-759-145-58	IC UPC4558C	

COIL

Ref.No	Part No.	Description	Remark
L001	1-408-421-00	MICRO INDUCTOR 100UH	
L002	1-408-405-00	MICRO INDUCTOR 4.7UH	
L003	1-408-421-00	MICRO INDUCTOR 100UH	
L004	1-408-405-00	MICRO INDUCTOR 4.7UH	
L005	1-408-421-00	MICRO INDUCTOR 100UH	
L006	1-408-418-00	MICRO INDUCTOR 56UH	
L007	1-408-609-41	MICRO INDUCTOR 33UH	
L008	1-408-416-00	MICRO INDUCTOR 39UH	
L009	1-408-413-00	MICRO INDUCTOR 22UH	
L601	1-408-421-00	MICRO INDUCTOR 100UH	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

FILTER

Ref.No	Part No.	Description	Remark
LPF001	1-235-365-11	L.P.F	
LPF002	1-235-365-11	L.P.F	

IC LINK

Ref.No	Part No.	Description	Remark
PS001⚠	1-532-605-00	LINK, IC	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q001	8-729-900-89	TRANSISTOR DTC144ES	
Q002	8-729-204-83	TRANSISTOR 2SA1048	
Q003	8-729-800-42	TRANSISTOR 2SK152	
Q004	8-729-204-83	TRANSISTOR 2SA1048	
Q005	8-729-245-83	TRANSISTOR 2SC2458	
Q006	8-729-900-89	TRANSISTOR DTC144ES	
Q007	8-729-900-89	TRANSISTOR DTC144ES	
Q008	8-729-800-42	TRANSISTOR 2SK152	
Q009	8-729-204-83	TRANSISTOR 2SA1048	
Q010	8-729-245-83	TRANSISTOR 2SC2458	
Q011	8-729-900-89	TRANSISTOR DTC144ES	
Q012	8-729-900-89	TRANSISTOR DTC144ES	
Q013	8-729-113-33	TRANSISTOR 2SB733	
Q014	8-729-117-54	TRANSISTOR 2SA1175	
Q015	8-729-603-30	TRANSISTOR 2SC403SP	
Q016	8-729-603-30	TRANSISTOR 2SC403SP	
Q017	8-729-603-30	TRANSISTOR 2SC403SP	
Q018	8-729-204-83	TRANSISTOR 2SA1048	
Q019	8-729-900-89	TRANSISTOR DTC144ES	
Q020	8-729-204-83	TRANSISTOR 2SA1048	
Q021	8-729-900-89	TRANSISTOR DTC144ES	
Q022	8-729-245-83	TRANSISTOR 2SC2458	
Q023	8-729-245-83	TRANSISTOR 2SC2458	
Q024	8-729-245-83	TRANSISTOR 2SC2458	
Q025	8-729-245-83	TRANSISTOR 2SC2458	
Q026	8-729-900-89	TRANSISTOR DTC144ES	
Q027	8-729-245-83	TRANSISTOR 2SC2458	
Q028	8-729-900-89	TRANSISTOR DTC144ES	
Q029	8-729-900-89	TRANSISTOR DTC144ES	
Q030	8-729-245-83	TRANSISTOR 2SC2458	
Q031	8-729-245-83	TRANSISTOR 2SC2458	
Q032	8-729-245-83	TRANSISTOR 2SC2458	
Q033	8-729-245-83	TRANSISTOR 2SC2458	
Q034	8-729-900-80	TRANSISTOR DTC114ES	
Q035	8-729-900-80	TRANSISTOR DTC114ES	
Q036	8-729-900-80	TRANSISTOR DTC114ES	
Q037	8-729-900-80	TRANSISTOR DTC114ES	
Q038	8-729-900-80	TRANSISTOR DTC114ES	
Q039	8-729-900-80	TRANSISTOR DTC114ES	
Q040	8-729-900-89	TRANSISTOR DTC144ES	
Q041	8-729-204-83	TRANSISTOR 2SA1048	
Q042	8-729-204-83	TRANSISTOR 2SA1048	
Q043	8-729-900-89	TRANSISTOR DTC144ES	
Q044	8-729-177-43	TRANSISTOR 2SD774	

Ref.No	Part No.	Description				Remark
Q048	8-729-900-89	TRANSISTOR DTC144ES				
Q050	8-729-900-89	TRANSISTOR DTC144ES				
Q501	8-729-245-83	TRANSISTOR 2SC2458				
Q502	8-729-245-83	TRANSISTOR 2SC2458				
Q503	8-729-245-83	TRANSISTOR 2SC2458				
Q601	8-729-245-83	TRANSISTOR 2SC2458				
Q602	8-729-245-83	TRANSISTOR 2SC2458				
Q603	8-729-245-83	TRANSISTOR 2SC2458				
Q604	8-729-245-83	TRANSISTOR 2SC2458				
Q605	8-729-900-89	TRANSISTOR DTC144ES				
Q607	8-729-245-83	TRANSISTOR 2SC2458				
Q608	8-729-245-83	TRANSISTOR 2SC2458				
Q609	8-729-245-83	TRANSISTOR 2SC2458				
Q610	8-729-900-89	TRANSISTOR DTC144ES				
Q611	8-729-245-83	TRANSISTOR 2SC2458				
Q612	8-729-245-83	TRANSISTOR 2SC2458				
Q613	8-729-245-83	TRANSISTOR 2SC2458				
Q614	8-729-245-83	TRANSISTOR 2SC2458				
Q615	8-729-245-83	TRANSISTOR 2SC2458				
Q616	8-729-245-83	TRANSISTOR 2SC2458				
Q619	⚠.8-729-113-33	TRANSISTOR 2SB733				
Q621	⚠.8-729-113-33	TRANSISTOR 2SB733				
Q623	8-729-900-36	TRANSISTOR DTC124ES				
Q624	8-729-900-89	TRANSISTOR DTC144ES				
Q625	8-729-245-83	TRANSISTOR 2SC2458				
Q626	8-729-245-83	TRANSISTOR 2SC2458				
Q627	8-729-245-83	TRANSISTOR 2SC2458				
Q628	8-729-900-89	TRANSISTOR DTC144ES				
Q629	8-729-245-83	TRANSISTOR 2SC2458				
Q630	8-729-245-83	TRANSISTOR 2SC2458				
Q631	8-729-900-89	TRANSISTOR DTC144ES				
Q632	8-729-900-89	TRANSISTOR DTC144ES				
Q633	8-729-900-89	TRANSISTOR DTC144ES				
Q650	8-729-245-83	TRANSISTOR 2SC2458				
Q651	8-729-245-83	TRANSISTOR 2SC2458				
		RESISTOR				
R001	1-247-849-00	CARBON	5.6K	5%	1/6W	
R002	1-247-831-00	CARBON	1K	5%	1/6W	
R003	1-247-831-00	CARBON	1K	5%	1/6W	
R004	1-247-827-00	CARBON	680	5%	1/6W	
R005	1-247-827-00	CARBON	680	5%	1/6W	
R006	1-247-843-00	CARBON	3.3K	5%	1/6W	
R007	1-249-421-11	CARBON	2.2K	5%	1/6W	
R008	1-247-831-00	CARBON	1K	5%	1/6W	
R009	1-247-831-00	CARBON	1K	5%	1/6W	
R010	1-247-831-00	CARBON	1K	5%	1/6W	
R011	1-247-831-00	CARBON	1K	5%	1/6W	
R012	1-247-807-00	CARBON	100	5%	1/6W	
R013	1-247-849-00	CARBON	5.6K	5%	1/6W	
R014	1-247-831-00	CARBON	1K	5%	1/6W	
R015	1-247-831-00	CARBON	1K	5%	1/6W	
R016	1-247-827-00	CARBON	680	5%	1/6W	

Ref.No	Part No.	Description				Remark
R017	1-247-827-00	CARBON	680	5%	1/6W	
R018	1-247-843-00	CARBON	3.3K	5%	1/6W	
R019	1-249-421-11	CARBON	2.2K	5%	1/6W	
R020	1-247-831-00	CARBON	1K	5%	1/6W	
R021	1-247-831-00	CARBON	1K	5%	1/6W	
R022	1-247-831-00	CARBON	1K	5%	1/6W	
R023	1-247-831-00	CARBON	1K	5%	1/6W	
R024	1-247-847-00	CARBON	4.7K	5%	1/6W	
R025	1-247-847-00	CARBON	4.7K	5%	1/6W	
R026	1-247-857-00	CARBON	12K	5%	1/6W	
R027	1-247-869-00	CARBON	39K	5%	1/6W	
R028	⚠.1-213-128-00	METAL OXIDE	56	5%	1W	F
R029	1-247-826-00	CARBON	620	5%	1/6W	
R030	1-214-673-00	METAL	4.7	1%	1/4W	
R031	1-247-823-00	CARBON	470	5%	1/6W	
R032	1-247-820-00	CARBON	360	5%	1/6W	
R033	1-247-799-00	CARBON	47	5%	1/6W	
R034	1-247-831-00	CARBON	1K	5%	1/6W	
R035	1-247-819-00	CARBON	330	5%	1/6W	
R036	1-249-429-11	CARBON	10K	5%	1/6W	
R037	1-247-853-00	CARBON	8.2K	5%	1/6W	
R038	1-215-436-00	METAL	4.3K	1%	1/6W	
R039	1-215-423-00	METAL	1.2K	1%	1/6W	
R040	1-247-847-00	CARBON	4.7K	5%	1/6W	
R041	1-247-847-00	CARBON	4.7K	5%	1/6W	
R042	1-247-861-00	CARBON	18K	5%	1/6W	
R043	1-247-861-00	CARBON	18K	5%	1/6W	
R044	1-247-861-00	CARBON	18K	5%	1/6W	
R045	1-247-861-00	CARBON	18K	5%	1/6W	
R046	⚠.1-212-853-00	FUSIBLE	6.8	5%	1/4W	F
R047	1-247-823-00	CARBON	470	5%	1/6W	
R048	1-247-823-00	CARBON	470	5%	1/6W	
R049	1-247-851-00	CARBON	6.8K	5%	1/6W	
R050	1-247-837-00	CARBON	1.8K	5%	1/6W	
R051	1-247-821-00	CARBON	390	5%	1/6W	
R052	1-247-859-00	CARBON	15K	5%	1/6W	
R053	1-247-857-00	CARBON	12K	5%	1/6W	
R054	1-247-863-00	CARBON	22K	5%	1/6W	
R055	1-247-852-00	CARBON	7.5K	5%	1/6W	
R056	1-247-848-00	CARBON	5.1K	5%	1/6W	
R057	1-249-421-11	CARBON	2.2K	5%	1/6W	
R058	1-247-861-00	CARBON	18K	5%	1/6W	
R059	1-249-421-11	CARBON	2.2K	5%	1/6W	
R060	1-249-421-11	CARBON	2.2K	5%	1/6W	
R061	1-247-861-00	CARBON	18K	5%	1/6W	
R062	1-247-898-00	CARBON	620K	5%	1/6W	
R063	1-247-843-00	CARBON	3.3K	5%	1/6W	
R064	1-247-843-00	CARBON	3.3K	5%	1/6W	
R065	1-247-843-00	CARBON	3.3K	5%	1/6W	
R066	1-247-807-00	CARBON	100	5%	1/6W	
R067	1-215-433-00	METAL	3.3K	1%	1/6W	
R068	1-247-859-00	CARBON	15K	5%	1/6W	
R069	1-247-824-00	CARBON	510	5%	1/6W	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description				Remark
R070	1-249-429-11	CARBON	10K	5%	1/6W	
R071	1-247-840-00	CARBON	2.4K	5%	1/6W	
R072	1-249-429-11	CARBON	10K	5%	1/6W	
R073	1-249-429-11	CARBON	10K	5%	1/6W	
R074	1-247-843-00	CARBON	3.3K	5%	1/6W	
R075	1-247-814-00	CARBON	200	5%	1/6W	
R076	1-247-834-00	CARBON	1.3K	5%	1/6W	
R077	1-247-858-00	CARBON	13K	5%	1/6W	
R078	1-247-838-00	CARBON	2K	5%	1/6W	
R079	1-247-858-00	CARBON	13K	5%	1/6W	
R080	1-249-429-11	CARBON	10K	5%	1/6W	
R081	1-247-833-00	CARBON	1.2K	5%	1/6W	
R082	1-247-895-00	CARBON	470K	5%	1/6W	
R083	1-247-834-00	CARBON	1.3K	5%	1/6W	
R084	1-247-853-00	CARBON	8.2K	5%	1/6W	
R085	1-249-434-11	CARBON	27K	5%	1/6W	
R086	1-249-414-11	CARBON	560	5%	1/6W	
R087	1-247-824-00	CARBON	510	5%	1/6W	
R102	1-247-831-00	CARBON	1K	5%	1/6W	
R109	1-247-847-00	CARBON	4.7K	5%	1/6W	
R110	1-247-847-00	CARBON	4.7K	5%	1/6W	
R114	1-247-831-00	CARBON	1K	5%	1/6W	
R115	1-249-437-11	CARBON	47K	5%	1/6W	
R116	1-249-437-11	CARBON	47K	5%	1/6W	
R117	1-247-879-00	CARBON	100K	5%	1/6W	
R118	1-247-881-00	CARBON	120K	5%	1/6W	
R119	1-247-847-00	CARBON	4.7K	5%	1/6W	
R120	1-247-847-00	CARBON	4.7K	5%	1/6W	
R121	1-249-437-11	CARBON	47K	5%	1/6W	
R122	1-249-437-11	CARBON	47K	5%	1/6W	
R123	1-249-437-11	CARBON	47K	5%	1/6W	
R124	1-249-421-11	CARBON	2.2K	5%	1/6W	
R125	1-249-419-11	CARBON	1.5K	5%	1/6W	
R126	1-247-869-00	CARBON	39K	5%	1/6W	
R127	1-249-429-11	CARBON	10K	5%	1/6W	
R128	1-247-813-00	CARBON	180	5%	1/6W	
R129	1-247-863-00	CARBON	22K	5%	1/6W	
R130	1-249-429-11	CARBON	10K	5%	1/6W	
R131	1-247-817-00	CARBON	270	5%	1/6W	
R132	1-247-873-00	CARBON	56K	5%	1/6W	
R133	1-247-867-00	CARBON	33K	5%	1/6W	
R134	1-247-849-00	CARBON	5.6K	5%	1/6W	
R135	1-247-847-00	CARBON	4.7K	5%	1/6W	
R136	1-247-847-00	CARBON	4.7K	5%	1/6W	
R137	1-247-849-00	CARBON	5.6K	5%	1/6W	
R138	1-249-429-11	CARBON	10K	5%	1/6W	
R139	1-249-429-11	CARBON	10K	5%	1/6W	
R140	1-247-807-00	CARBON	100	5%	1/6W	
R141	1-247-807-00	CARBON	100	5%	1/6W	
R142	1-249-421-11	CARBON	2.2K	5%	1/6W	
R143	1-249-421-11	CARBON	2.2K	5%	1/6W	
R144	1-249-429-11	CARBON	10K	5%	1/6W	
R145	1-249-429-11	CARBON	10K	5%	1/6W	

Ref.No	Part No.	Description				Remark
R146	1-249-429-11	CARBON	10K	5%	1/6W	
R147	1-249-421-11	CARBON	2.2K	5%	1/6W	
R148	1-249-437-11	CARBON	47K	5%	1/6W	
R152	1-215-462-00	METAL	51K	1%	1/6W	
R153	1-247-815-00	CARBON	220	5%	1/6W	
R154	1-215-465-00	METAL	68K	1%	1/6W	
R155	1-215-446-00	METAL	11K	1%	1/6W	
R156	1-215-465-00	METAL	68K	1%	1/6W	
R157	1-215-446-00	METAL	11K	1%	1/6W	
R158	1-215-462-00	METAL	51K	1%	1/6W	
R159	1-249-437-11	CARBON	47K	5%	1/6W	
R160	1-249-429-11	CARBON	10K	5%	1/6W	
R161	1-249-437-11	CARBON	47K	5%	1/6W	
R162	1-247-815-00	CARBON	220	5%	1/6W	
R163	1-249-429-11	CARBON	10K	5%	1/6W	
R164	1-249-429-11	CARBON	10K	5%	1/6W	
R165	1-215-429-00	METAL	2.2K	1%	1/6W	
R166	1-215-429-00	METAL	2.2K	1%	1/6W	
R167	1-249-429-11	CARBON	10K	5%	1/6W	
R168	1-249-429-11	CARBON	10K	5%	1/6W	
R169	1-247-843-00	CARBON	3.3K	5%	1/6W	
R170	1-247-849-00	CARBON	5.6K	5%	1/6W	
R171	1-247-851-00	CARBON	6.8K	5%	1/6W	
R172	1-247-841-00	CARBON	2.7K	5%	1/6W	
R175	1-247-824-00	CARBON	510	5%	1/6W	
R176	1-247-836-00	CARBON	1.6K	5%	1/6W	
R177	1-249-414-11	CARBON	560	5%	1/6W	
R178	1-249-434-11	CARBON	27K	5%	1/6W	
R179	1-247-853-00	CARBON	8.2K	5%	1/6W	
R180	1-247-834-00	CARBON	1.3K	5%	1/6W	
R181	1-247-838-00	CARBON	2K	5%	1/6W	
R182	1-247-858-00	CARBON	13K	5%	1/6W	
R183	1-247-895-00	CARBON	470K	5%	1/6W	
R184	1-247-858-00	CARBON	13K	5%	1/6W	
R185	1-249-429-11	CARBON	10K	5%	1/6W	
R186	1-247-833-00	CARBON	1.2K	5%	1/6W	
R187	1-247-843-00	CARBON	3.3K	5%	1/6W	
R188	1-247-834-00	CARBON	1.3K	5%	1/6W	
R189	1-247-814-00	CARBON	200	5%	1/6W	
R190	1-249-429-11	CARBON	10K	5%	1/6W	
R191	1-249-429-11	CARBON	10K	5%	1/6W	
R192	1-247-840-00	CARBON	2.4K	5%	1/6W	
R193	1-249-429-11	CARBON	10K	5%	1/6W	
R194	1-247-824-00	CARBON	510	5%	1/6W	
R195	1-247-859-00	CARBON	15K	5%	1/6W	
R196	1-247-807-00	CARBON	100	5%	1/6W	
R197	1-215-433-00	METAL	3.3K	1%	1/6W	
R198	1-247-848-00	CARBON	5.1K	5%	1/6W	
R199	1-249-429-11	CARBON	10K	5%	1/6W	
R200	1-247-861-00	CARBON	18K	5%	1/6W	
R201	1-249-421-11	CARBON	2.2K	5%	1/6W	
R202	1-247-861-00	CARBON	18K	5%	1/6W	
R203	1-249-421-11	CARBON	2.2K	5%	1/6W	

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description				Remark
R206	1-247-843-00	CARBON	3.3K	5%	1/6W	
R207	1-247-843-00	CARBON	3.3K	5%	1/6W	
R208	1-247-843-00	CARBON	3.3K	5%	1/6W	
R209	1-247-883-00	CARBON	150K	5%	1/6W	
R210	1-247-864-00	CARBON	24K	5%	1/6W	
R211	1-247-898-00	CARBON	620K	5%	1/6W	
R212	1-247-847-00	CARBON	4.7K	5%	1/6W	
R213	1-247-843-00	CARBON	3.3K	5%	1/6W	
R214	1-247-841-00	CARBON	2.7K	5%	1/6W	
R215	1-249-419-11	CARBON	1.5K	5%	1/6W	
R216	1-247-857-00	CARBON	12K	5%	1/6W	
R217	1-247-864-00	CARBON	24K	5%	1/6W	
R218	1-247-861-00	CARBON	18K	5%	1/6W	
R219	1-249-437-11	CARBON	47K	5%	1/6W	
R220	1-247-821-00	CARBON	390	5%	1/6W	
R221	1-247-859-00	CARBON	15K	5%	1/6W	
R222	1-247-837-00	CARBON	1.8K	5%	1/6W	
R223	1-247-851-00	CARBON	6.8K	5%	1/6W	
R225	1-247-847-00	CARBON	4.7K	5%	1/6W	
R226	1-247-847-00	CARBON	4.7K	5%	1/6W	
R227	⚠.1-212-853-00	FUSIBLE	6.8	5%	1/4W	F
R228	1-247-829-00	CARBON	820	5%	1/6W	
R229	1-247-819-00	CARBON	330	5%	1/6W	
R230	1-247-827-00	CARBON	680	5%	1/6W	
R231	1-247-847-00	CARBON	4.7K	5%	1/6W	
R232	1-247-849-00	CARBON	5.6K	5%	1/6W	
R233	1-247-823-00	CARBON	470	5%	1/6W	
R239	1-247-847-00	CARBON	4.7K	5%	1/6W	
R241	1-247-879-00	CARBON	100K	5%	1/6W	
R244	1-247-875-00	CARBON	68K	5%	1/6W	
R501	1-249-437-11	CARBON	47K	5%	1/6W	
R502	1-249-437-11	CARBON	47K	5%	1/6W	
R503	1-249-437-11	CARBON	47K	5%	1/6W	
R601	1-247-845-00	CARBON	3.9K	5%	1/6W	
R602	1-247-837-00	CARBON	1.8K	5%	1/6W	
R603	1-247-831-00	CARBON	1K	5%	1/6W	
R604	1-247-857-00	CARBON	12K	5%	1/6W	
R605	1-247-851-00	CARBON	6.8K	5%	1/6W	
R607	1-247-851-00	CARBON	6.8K	5%	1/6W	
R608	1-247-851-00	CARBON	6.8K	5%	1/6W	
R610	1-247-846-00	CARBON	4.3K	5%	1/6W	
R611	1-249-429-11	CARBON	10K	5%	1/6W	
R612	1-247-831-00	CARBON	1K	5%	1/6W	
R613	1-247-857-00	CARBON	12K	5%	1/6W	
R614	1-247-857-00	CARBON	12K	5%	1/6W	
R615	1-249-414-11	CARBON	560	5%	1/6W	
R616	1-247-847-00	CARBON	4.7K	5%	1/6W	
R617	1-247-831-00	CARBON	1K	5%	1/6W	
R618	1-249-429-11	CARBON	10K	5%	1/6W	
R619	1-249-429-11	CARBON	10K	5%	1/6W	
R620	1-247-831-00	CARBON	1K	5%	1/6W	
R625	1-247-847-00	CARBON	4.7K	5%	1/6W	
R626	1-247-831-00	CARBON	1K	5%	1/6W	

Ref.No	Part No.	Description				Remark
R627	1-249-421-11	CARBON	2.2K	5%	1/6W	
R628	1-247-831-00	CARBON	1K	5%	1/6W	
R632	1-247-847-00	CARBON	4.7K	5%	1/6W	
R633	1-247-847-00	CARBON	4.7K	5%	1/6W	
R634	1-249-414-11	CARBON	560	5%	1/6W	
R635	1-247-847-00	CARBON	4.7K	5%	1/6W	
R636	1-247-847-00	CARBON	4.7K	5%	1/6W	
R638	1-247-847-00	CARBON	4.7K	5%	1/6W	
R639	⚠.1-247-827-00	CARBON	680	5%	1/6W	
R640	1-247-847-00	CARBON	4.7K	5%	1/6W	
R641	⚠.1-247-827-00	CARBON	680	5%	1/6W	
R642	⚠.1-212-849-00	FUSIBLE	4.7	5%	1/4W	F
R643	1-247-851-00	CARBON	6.8K	5%	1/6W	
R644	1-247-847-00	CARBON	4.7K	5%	1/6W	
R650	1-247-843-00	CARBON	3.3K	5%	1/6W	
R651	1-247-879-00	CARBON	100K	5%	1/6W	
R652	1-247-859-00	CARBON	15K	5%	1/6W	
R653	1-247-851-00	CARBON	6.8K	5%	1/6W	
R654	1-247-823-00	CARBON	470	5%	1/6W	
R655	1-247-843-00	CARBON	3.3K	5%	1/6W	
R656	1-247-879-00	CARBON	100K	5%	1/6W	
R657	1-247-859-00	CARBON	15K	5%	1/6W	
R658	1-247-851-00	CARBON	6.8K	5%	1/6W	
R659	1-247-823-00	CARBON	470	5%	1/6W	
R660	1-247-831-00	CARBON	1K	5%	1/6W	
R661	1-247-831-00	CARBON	1K	5%	1/6W	
R662	1-247-847-00	CARBON	4.7K	5%	1/6W	
R663	1-247-887-00	CARBON	220K	5%	1/6W	
R664	1-247-887-00	CARBON	220K	5%	1/6W	
R665	1-249-437-11	CARBON	47K	5%	1/6W	
R666	1-247-895-00	CARBON	470K	5%	1/6W	
R667	1-247-863-00	CARBON	22K	5%	1/6W	
R668	1-249-437-11	CARBON	47K	5%	1/6W	
R669	1-247-895-00	CARBON	470K	5%	1/6W	
R670	1-247-863-00	CARBON	22K	5%	1/6W	
R671	1-249-429-11	CARBON	10K	5%	1/6W	
R672	1-215-415-00	METAL	560	1%	1/6W	
R675	1-247-843-00	CARBON	3.3K	5%	1/6W	
R677	1-247-849-00	CARBON	5.6K	5%	1/6W	
R678	1-247-879-00	CARBON	100K	5%	1/6W	
R679	1-247-879-00	CARBON	100K	5%	1/6W	
R680	1-249-437-11	CARBON	47K	5%	1/6W	
R681	1-249-437-11	CARBON	47K	5%	1/6W	
R682	1-247-879-00	CARBON	100K	5%	1/6W	
R683	1-247-847-00	CARBON	4.7K	5%	1/6W	
R684	1-249-437-11	CARBON	47K	5%	1/6W	
R685	1-249-437-11	CARBON	47K	5%	1/6W	
R686	1-249-437-11	CARBON	47K	5%	1/6W	
R687	1-247-807-00	CARBON	100	5%	1/6W	
R688	1-249-429-11	CARBON	10K	5%	1/6W	
R689	1-247-879-00	CARBON	100K	5%	1/6W	
R690	1-247-889-00	CARBON	270K	5%	1/6W	
R691	1-247-823-00	CARBON	470	5%	1/6W	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

AF-14 PJ-3 SS-50

Ref.No	Part No.	Description				Remark
R692	1-247-847-00	CARBON	4.7K	5%	1/6W	
R693	1-247-807-00	CARBON	100	5%	1/6W	
R693	1-247-807-00	CARBON	100	5%	1/6W	
R694	1-249-425-11	CARBON	4.7K	5%	1/6W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV001	1-228-991-00	RES, ADJ, CARBON 2.2K	
RV002	1-228-994-00	RES, ADJ, CARBON 10K	
RV003	1-228-993-00	RES, ADJ, CARBON 4.7K	
RV005	1-228-993-00	RES, ADJ, CARBON 4.7K	
RV006	1-228-993-00	RES, ADJ, CARBON 4.7K	
RV007	1-228-993-00	RES, ADJ, CARBON 4.7K	
RV008	1-228-990-00	RES, ADJ, CARBON 1K	
RV009	1-228-921-00	RES, ADJ, CARBON 4.7K	
RV010	1-228-994-00	RES, ADJ, CARBON 10K	
RV011	1-228-991-00	RES, ADJ, CARBON 2.2K	
RV012	1-228-990-00	RES, ADJ, CARBON 1K	
RV013	1-228-993-00	RES, ADJ, CARBON 4.7K	
RV014	1-228-993-00	RES, ADJ, CARBON 4.7K	
RV601	1-228-919-00	RES, ADJ, CARBON 1K	
RV602	1-228-921-00	RES, ADJ, CARBON 4.7K	
RV603	1-228-921-00	RES, ADJ, CARBON 4.7K	
RV604	1-228-995-00	RES, ADJ, METAL GLAZE 22K	
RV605	1-228-995-00	RES, ADJ, METAL GLAZE 22K	

TRANSFORMER

Ref.No	Part No.	Description	Remark
T001	1-427-546-11	TRANSFORMER, I/O	
T002	1-427-546-11	TRANSFORMER, I/O	

THERMISTOR

Ref.No	Part No.	Description	Remark
TH001	1-800-202-XX	THERMISTOR S-10K	
TH002	1-800-198-XX	THERMISTOR S-1K	

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Ref.No	Part No.	Description	Remark
	*1-617-034-13	PJ-3 BOARD ***********	
	1-507-907-11	JACK, PIN 4P	

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Ref.No	Part No.	Description	Remark
	*A-6715-272-A	SS-50 BOARD, COMPLETE **********************	
	*3-681-170-00	HEAT SINK, S	
	*3-683-631-01	CLAMP	

CAPACITOR

Ref.No	Part No.	Description			Remark
C101	1-161-023-00	CERAMIC	0.068MF	10%	25V
C102	1-102-816-00	CERAMIC	120PF	10%	50V
C103	1-102-513-00	CERAMIC	18PF	5%	50V
C104	1-102-513-00	CERAMIC	18PF	5%	50V
C105	1-161-023-00	CERAMIC	0.068MF	10%	25V
C106	1-102-529-00	CERAMIC	100PF	5%	50V
C107	1-102-529-00	CERAMIC	100PF	5%	50V
C108	1-161-023-00	CERAMIC	0.068MF	10%	25V
C109	1-161-023-00	CERAMIC	0.068MF	10%	25V
C110	1-161-025-00	CERAMIC	0.1MF	10%	25V
C111	1-161-025-00	CERAMIC	0.1MF	10%	25V
C112	1-130-499-00	MYLAR	0.22MF	5%	50V
C113	1-123-380-00	ELECT	1MF	20%	50V
C114	1-123-343-00	ELECT	33MF	20%	25V
C115	1-102-518-00	CERAMIC	33PF	5%	50V
C116	1-102-518-00	CERAMIC	33PF	5%	50V
C119	1-161-059-00	CERAMIC	0.047MF	10%	25V
C120	1-161-059-00	CERAMIC	0.047MF	10%	25V
C121	1-161-013-00	CERAMIC	0.01MF	10%	25V
C122	1-123-318-00	ELECT	33MF	20%	16V
C150	1-123-330-00	ELECT	22MF	20%	16V
C301	1-131-344-00	TANTALUM	0.33MF	10%	35V
C302	1-130-491-00	MYLAR	0.047MF	5%	50V
C303	1-130-491-00	MYLAR	0.047MF	5%	50V
C304	1-161-059-00	CERAMIC	0.047MF	10%	25V
C305	1-123-308-00	ELECT	220MF	20%	10V
C306	1-130-491-00	MYLAR	0.047MF	5%	50V
C307	1-130-491-00	MYLAR	0.047MF	5%	50V
C308	1-161-013-00	CERAMIC	0.01MF	10%	25V
C309	1-161-013-00	CERAMIC	0.01MF	10%	25V
C310	1-123-356-00	ELECT	10MF	20%	16V
C311	1-130-483-00	MYLAR	0.01MF	5%	50V
C312	1-130-491-00	MYLAR	0.047MF	5%	50V
C313	1-130-491-00	MYLAR	0.047MF	5%	50V
C314	1-130-491-00	MYLAR	0.047MF	5%	50V
C315	1-130-491-00	MYLAR	0.047MF	5%	50V
C316	1-130-491-00	MYLAR	0.047MF	5%	50V
C317	1-161-045-00	CERAMIC	0.0033MF	10%	25V
C318	1-161-039-00	CERAMIC	0.001MF	10%	25V
C320	1-123-380-00	ELECT	1MF	20%	50V
C321	1-161-039-00	CERAMIC	0.001MF	10%	25V
C323	1-123-332-00	ELECT	47MF	20%	16V
C324	1-161-059-00	CERAMIC	0.047MF	10%	25V
C325	1-123-356-00	ELECT	10MF	20%	16V
C328	1-123-381-00	ELECT	2.2MF	20%	50V
C329	1-123-381-00	ELECT	2.2MF	20%	50V
C330	1-123-381-00	ELECT	2.2MF	20%	50V
C332	1-123-356-00	ELECT	10MF	20%	16V
C333	1-123-356-00	ELECT	10MF	20%	16V
C334	1-123-381-00	ELECT	2.2MF	20%	50V
C335	1-161-039-00	CERAMIC	0.001MF	10%	25V
C336	1-123-332-00	ELECT	47MF	20%	16V
C337	1-161-059-00	CERAMIC	0.047MF	10%	25V
C338	1-161-045-00	CERAMIC	0.0033MF	10%	25V
C339	1-130-493-00	MYLAR	0.068MF	5%	50V
C340	1-123-332-00	ELECT	47MF	20%	16V
C341	1-102-973-00	CERAMIC	100PF	5%	50V
C342	1-123-356-00	ELECT	10MF	20%	16V
C343	1-123-381-00	ELECT	2.2MF	20%	50V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
C344	1-123-379-00	ELECT	0.47MF	20%	50V
C345	1-130-483-00	MYLAR	0.01MF	5%	50V
C346	1-123-369-00	ELECT	4.7MF	20%	25V
C347	1-123-369-00	ELECT	4.7MF	20%	25V
C349	1-161-059-00	CERAMIC	0.047MF	10%	25V
C350	1-123-333-00	ELECT	100MF	20%	16V
C351	1-130-493-00	MYLAR	0.068MF	5%	50V
C352	1-130-483-00	MYLAR	0.01MF	5%	50V
C353	1-123-321-00	ELECT	220MF	20%	16V
C354	1-161-053-00	CERAMIC	0.015MF	10%	25V
C355	1-161-043-00	CERAMIC	0.0022MF	10%	25V
C356	1-161-059-00	CERAMIC	0.047MF	10%	25V
C357	1-161-025-00	CERAMIC	0.1MF	10%	25V
C358	1-161-059-00	CERAMIC	0.047MF	10%	25V
C359	1-123-356-00	ELECT	10MF	20%	16V
C360	1-161-059-00	CERAMIC	0.047MF	10%	25V
C361	1-123-332-00	ELECT	47MF	20%	16V
C362	1-123-380-00	ELECT	1MF	20%	50V
C370	1-123-381-00	ELECT	2.2MF	20%	50V
C371	1-123-307-00	ELECT	100MF	20%	10V
C372	1-123-332-00	ELECT	47MF	20%	16V
C373	1-123-356-00	ELECT	10MF	20%	16V
C374	1-161-025-00	CERAMIC	0.1MF	10%	25V
C375	1-123-356-00	ELECT	10MF	20%	16V
C376	1-123-318-00	ELECT	33MF	20%	10V
C377	1-130-497-00	MYLAR	0.15MF	5%	50V
C378	1-161-039-00	CERAMIC	0.001MF	10%	25V
C379	1-161-039-00	CERAMIC	0.001MF	10%	25V
C501	1-161-013-00	CERAMIC	0.01MF	10%	25V
C502	1-161-013-00	CERAMIC	0.01MF	10%	25V
C503	1-161-059-00	CERAMIC	0.047MF	10%	25V
C504	1-123-356-00	ELECT	10MF	20%	16V
C505	1-161-013-00	CERAMIC	0.01MF	10%	25V
C506	1-123-356-00	ELECT	10MF	20%	16V
C507	1-161-059-00	CERAMIC	0.047MF	10%	25V
C508	1-123-380-00	ELECT	1MF	20%	50V
C609	1-123-307-00	ELECT	100MF	20%	10V
C610	1-123-380-00	ELECT	1MF	20%	50V
C611	1-123-307-00	ELECT	100MF	20%	10V

CONNECTOR

CN101	*1-560-900-00	PIN, CONNECTOR 12P
CN102	*1-560-900-00	PIN, CONNECTOR 12P
CN103	*1-560-893-00	PIN, CONNECTOR 5P
CN104	*1-560-898-00	PIN, CONNECTOR 10P
CN105	*1-564-011-11	PIN, CONNECTOR 12P
CN106	*1-560-891-00	PIN, CONNECTOR 3P
CN107	*1-560-891-00	PIN, CONNECTOR 3P
CN108	*1-564-007-00	PIN, CONNECTOR 8P
CN109	*1-560-890-00	PIN, CONNECTOR 2P
CN110	1-562-732-11	SOCKET 5P
CN111	*1-560-896-00	PIN, CONNECTOR 8P
CN112	1-507-678-21	JACK

Ref.No	Part No.	Description	Remark
CN113	*1-564-003-00	PIN, CONNECTOR 4P	
CN114	*1-560-892-00	PIN, CONNECTOR 4P	
CN301	*1-560-896-00	PIN, CONNECTOR 8P	
CN302	*1-560-894-00	PIN, CONNECTOR 6P	
CN303	*1-560-892-00	PIN, CONNECTOR 4P	
CN304	*1-560-896-00	PIN, CONNECTOR 8P	
CN305	*1-560-892-00	PIN, CONNECTOR 4P	
CN306	*1-560-890-00	PIN, CONNECTOR 2P	
CN307	*1-560-891-00	PIN, CONNECTOR 3P	
CN308	*1-560-891-00	PIN, CONNECTOR 3P	
CN309	*1-560-890-00	PIN, CONNECTOR 2P	

DIODE

D101	8-719-200-02	DIODE 10E-2
D102	8-719-000-04	DIODE MC911
D104	8-719-100-71	DIODE RD15E-B2
D105	8-719-100-71	DIODE RD15E-B2
D106	8-719-100-71	DIODE RD15E-B2
D107	8-719-000-06	DIODE MC921
D110	8-719-911-19	DIODE 1SS119
D111	8-719-200-23	DIODE 11E2
D112	8-719-911-19	DIODE 1SS119
D120	8-719-911-19	DIODE 1SS119
D121	8-719-911-19	DIODE 1SS119
D122	8-719-911-19	DIODE 1SS119
D301	8-719-911-19	DIODE 1SS119
D302	8-719-911-19	DIODE 1SS119
D303	8-719-911-19	DIODE 1SS119
D304	8-719-000-06	DIODE MC921
D305	8-719-000-06	DIODE MC921
D306	8-719-000-06	DIODE MC921
D307	8-719-000-06	DIODE MC921
D308	8-719-911-19	DIODE 1SS119
D309	8-719-000-06	DIODE MC921
D310	8-719-000-06	DIODE MC921
D311	8-719-911-19	DIODE 1SS119
D312	8-719-200-02	DIODE 10E-2
D313	8-719-191-07	DIODE RD9.1E-B
D314	8-719-101-34	DIODE RD3.0EL1
D315	8-719-911-19	DIODE 1SS119
D316	8-719-911-19	DIODE 1SS119
D317	8-719-911-19	DIODE 1SS119
D318	8-719-911-19	DIODE 1SS119
D320	8-719-000-06	DIODE MC921
D321	8-719-911-19	DIODE 1SS119
D322	8-719-911-19	DIODE 1SS119
D323	8-719-911-19	DIODE 1SS119
D610	8-719-911-19	DIODE 1SS119

IC

IC101	8-759-924-61	IC MB88551-181M
IC102	8-759-602-75	IC M50761-696P
IC103	8-759-105-55	IC UPD7508HG-537-22

When indicating parts by reference number, please include the board name.

SS-50

Ref.No	Part No.	Description	Remark
IC104	8-759-921-02	IC MB89005-104	
IC105	8-759-920-94	IC MSM6411B-19RS	
IC106	8-759-240-53	IC TC4053BP	
IC108	8-759-801-60	IC LB1640N	
IC109	8-759-801-60	IC LB1640N	
IC110	8-759-135-80	IC UPC358C	
IC301	8-752-012-41	IC CX20124A	
IC302	8-752-006-90	IC CX20069	
IC304	8-759-240-51	IC TC4051BP	
IC305	8-759-100-06	IC UPC4556C	
IC306	8-759-240-13	IC TC4013BP	
IC307	8-759-135-80	IC UPC358C	
IC308	8-759-132-40	IC UPC324C	
IC309	8-759-240-66	IC TC4066BP	
IC310	8-759-240-53	IC TC4053BP	
IC501	8-759-918-61	IC MB88201-191G	
IC602	8-759-240-53	IC TC4053BP	
		COIL	
L101	1-408-412-00	MICRO INDUCTOR 18UH	
L102	1-407-705-00	MICRO INDUCTOR 100UH	
L103	1-407-705-00	MICRO INDUCTOR 100UH	
L501	1-408-421-00	MICRO INDUCTOR 100UH	
L502	1-408-417-00	MICRO INDUCTOR 47UH	
		IC LINK	
PS101⚠	1-532-637-00	LINK, IC	
PS301⚠	1-532-727-11	LINK, IC	
PS302⚠	1-532-727-11	LINK, IC	
PS303⚠	1-532-727-11	LINK, IC	
		TRANSISTOR	
Q101	8-729-900-89	TRANSISTOR DTC144ES	
Q102	8-729-900-65	TRANSISTOR DTA144ES	
Q103	8-729-900-89	TRANSISTOR DTC144ES	
Q104	8-729-900-89	TRANSISTOR DTC144ES	
Q105	8-729-900-89	TRANSISTOR DTC144ES	
Q106	8-729-204-83	TRANSISTOR 2SA1048	
Q109	8-729-900-89	TRANSISTOR DTC144ES	
Q111	8-729-900-89	TRANSISTOR DTC144ES	
Q112	8-729-900-89	TRANSISTOR DTC144ES	
Q113	8-729-245-83	TRANSISTOR 2SC2458	
Q114	8-729-245-83	TRANSISTOR 2SC2458	
Q117	8-729-204-83	TRANSISTOR 2SA1048	
Q118	8-729-113-32	TRANSISTOR 2SB733	
Q119	8-729-204-83	TRANSISTOR 2SA1048	
Q120	8-729-900-80	TRANSISTOR DTC114ES	
Q121	8-729-900-89	TRANSISTOR DTC144ES	
Q122	8-729-900-89	TRANSISTOR DTC144ES	
Q301	8-729-900-89	TRANSISTOR DTC144ES	
Q302	8-729-900-89	TRANSISTOR DTC144ES	
Q303	8-729-900-89	TRANSISTOR DTC144ES	
Q304	8-729-900-89	TRANSISTOR DTC144ES	
Q305	8-729-245-83	TRANSISTOR 2SC2458	
Q306	8-729-245-83	TRANSISTOR 2SC2458	
Q307	8-729-204-83	TRANSISTOR 2SA1048	
Q308	8-729-245-83	TRANSISTOR 2SC2458	
Q309	8-729-177-32	TRANSISTOR 2SD773	
Q310	8-729-900-89	TRANSISTOR DTC144ES	
Q311	8-729-900-89	TRANSISTOR DTC144ES	
Q312	8-729-245-83	TRANSISTOR 2SC2458	
Q313	8-729-204-83	TRANSISTOR 2SA1048	
Q314	8-729-900-89	TRANSISTOR DTC144ES	
Q315	8-729-831-33	TRANSISTOR 2SD313HP	
Q316	8-729-247-33	TRANSISTOR 2SA473	
Q317	8-729-900-65	TRANSISTOR DTA144ES	
Q318	8-729-900-89	TRANSISTOR DTC144ES	
Q319	8-729-900-80	TRANSISTOR DTC114ES	
Q320	8-729-245-83	TRANSISTOR 2SC2458	
Q321	8-729-245-83	TRANSISTOR 2SC2458	
Q322	8-729-245-83	TRANSISTOR 2SC2458	
Q323	8-729-900-89	TRANSISTOR DTC144ES	
Q324	8-729-245-83	TRANSISTOR 2SC2458	
Q325	8-729-831-33	TRANSISTOR 2SD313HP	
Q326	8-729-900-89	TRANSISTOR DTC144ES	
Q327	8-729-900-89	TRANSISTOR DTC144ES	
Q328	8-729-245-83	TRANSISTOR 2SC2458	
Q329	8-729-204-83	TRANSISTOR 2SA1048	
Q330	8-729-245-83	TRANSISTOR 2SC2458	
Q331	8-729-900-89	TRANSISTOR DTC144ES	
Q333	8-729-204-83	TRANSISTOR 2SA1048	
Q334	8-729-245-83	TRANSISTOR 2SC2458	
Q335	8-729-900-89	TRANSISTOR DTC144ES	
Q336	8-729-245-83	TRANSISTOR 2SC2458	
Q337	8-729-900-89	TRANSISTOR DTC144ES	
Q338	8-729-177-32	TRANSISTOR 2SD773	
Q339	8-729-900-89	TRANSISTOR DTC144ES	
Q340	8-729-900-89	TRANSISTOR DTC144ES	
Q341	8-729-900-89	TRANSISTOR DTC144ES	
Q342	8-729-900-65	TRANSISTOR DTA144ES	
Q343	8-729-900-89	TRANSISTOR DTC144ES	
Q344	8-729-900-89	TRANSISTOR DTC144ES	
Q345	8-729-113-32	TRANSISTOR 2SB733	
Q346	8-729-204-83	TRANSISTOR 2SA1048	
Q350	8-729-900-89	TRANSISTOR DTC144ES	
Q351	8-729-900-89	TRANSISTOR DTC144ES	
Q355	8-729-900-89	TRANSISTOR DTC144ES	
Q356	8-729-204-83	TRANSISTOR 2SA1048	
Q357	8-729-204-83	TRANSISTOR 2SA1048	
Q358	8-729-245-83	TRANSISTOR 2SC2458	
Q359	8-729-245-83	TRANSISTOR 2SC2458	
Q360	8-729-900-65	TRANSISTOR DTA144ES	
Q361	8-729-900-89	TRANSISTOR DTC144ES	
Q362	8-729-900-89	TRANSISTOR DTC144ES	
Q363	8-729-245-83	TRANSISTOR 2SC2458	
Q364	8-729-900-89	TRANSISTOR DTC144ES	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
Q365	8-729-900-89	TRANSISTOR DTC144ES				
Q366	8-729-245-83	TRANSISTOR 2SC2458				
Q367	8-729-900-89	TRANSISTOR DTC144ES				
Q501	8-729-245-83	TRANSISTOR 2SC2458				
Q612	8-729-900-89	TRANSISTOR DTC144ES				
Q613	8-729-900-89	TRANSISTOR DTC144ES				
Q614	8-729-900-89	TRANSISTOR DTC144ES				
		RESISTOR				
R105	1-249-429-11	CARBON	10K	5%	1/6W	
R106	1-249-429-11	CARBON	10K	5%	1/6W	
R107	1-249-429-11	CARBON	10K	5%	1/6W	
R108	1-249-429-11	CARBON	10K	5%	1/6W	
R110	1-247-843-00	CARBON	3.3K	5%	1/6W	
R111	1-247-903-00	CARBON	1M	5%	1/6W	
R113	1-247-879-00	CARBON	100K	5%	1/6W	
R114	1-247-843-00	CARBON	3.3K	5%	1/6W	
R115	1-247-843-00	CARBON	3.3K	5%	1/6W	
R116	1-247-843-00	CARBON	3.3K	5%	1/6W	
R117	1-247-843-00	CARBON	3.3K	5%	1/6W	
R119	1-249-429-11	CARBON	10K	5%	1/6W	
R120	1-249-429-11	CARBON	10K	5%	1/6W	
R121	1-249-429-11	CARBON	10K	5%	1/6W	
R122	1-249-429-11	CARBON	10K	5%	1/6W	
R123	1-249-429-11	CARBON	10K	5%	1/6W	
R127	1-247-887-00	CARBON	220K	5%	1/6W	
R128	1-247-901-00	CARBON	820K	5%	1/6W	
R129	1-249-429-11	CARBON	10K	5%	1/6W	
R130	1-247-821-00	CARBON	390	5%	1/6W	
R131	1-247-898-00	CARBON	620K	5%	1/6W	
R132	1-249-429-11	CARBON	10K	5%	1/6W	
R133	1-249-414-11	CARBON	560	5%	1/6W	
R134	1-249-414-11	CARBON	560	5%	1/6W	
R135	1-249-429-11	CARBON	10K	5%	1/6W	
R136	1-249-429-11	CARBON	10K	5%	1/6W	
R137	1-249-421-11	CARBON	2.2K	5%	1/6W	
R138	1-249-429-11	CARBON	10K	5%	1/6W	
R139	1-249-421-11	CARBON	2.2K	5%	1/6W	
R142	1-249-419-11	CARBON	1.5K	5%	1/6W	
R143 ⚠	1-247-831-00	CARBON	1K	5%	1/6W	
R146	1-247-831-00	CARBON	1K	5%	1/6W	
R147	1-247-831-00	CARBON	1K	5%	1/6W	
R148	1-247-831-00	CARBON	1K	5%	1/6W	
R149	1-247-779-00	CARBON	6.8	5%	1/6W	
R150	1-247-851-00	CARBON	6.8K	5%	1/6W	
R151	1-247-851-00	CARBON	6.8K	5%	1/6W	
R160	1-247-841-00	CARBON	2.7K	5%	1/6W	
R161	1-249-429-11	CARBON	10K	5%	1/6W	
R170	1-249-421-11	CARBON	2.2K	5%	1/6W	
R171	1-249-429-11	CARBON	10K	5%	1/6W	
R172	1-249-429-11	CARBON	10K	5%	1/6W	
R175	1-249-425-11	CARBON	4.7K	5%	1/6W	
R176	1-249-425-11	CARBON	4.7K	5%	1/6W	

Ref.No	Part No.	Description				Remark
R301	1-249-421-11	CARBON	2.2K	5%	1/6W	
R302	1-247-847-00	CARBON	4.7K	5%	1/6W	
R304	1-247-883-00	CARBON	150K	5%	1/6W	
R305	1-249-429-11	CARBON	10K	5%	1/6W	
R306	1-247-869-00	CARBON	39K	5%	1/6W	
R307	1-247-877-00	CARBON	82K	5%	1/6W	
R308	1-247-877-00	CARBON	82K	5%	1/6W	
R309	1-247-885-00	CARBON	180K	5%	1/6W	
R311	1-247-883-00	CARBON	150K	5%	1/6W	
R312	1-249-429-11	CARBON	10K	5%	1/6W	
R313	1-247-841-00	CARBON	2.7K	5%	1/6W	
R314	1-215-467-00	METAL	82K	1%	1/6W	
R315	1-215-400-00	METAL	130	1%	1/6W	
R316	1-215-400-00	METAL	130	1%	1/6W	
R317	1-215-420-00	METAL	910	1%	1/6W	
R318	1-215-433-00	METAL	3.3K	1%	1/6W	
R319	1-249-437-11	CARBON	47K	5%	1/6W	
R320	1-249-421-11	CARBON	2.2K	5%	1/6W	
R321	1-249-429-11	CARBON	10K	5%	1/6W	
R322	1-247-859-00	CARBON	15K	5%	1/6W	
R323	1-249-437-11	CARBON	47K	5%	1/6W	
R324	1-249-437-11	CARBON	47K	5%	1/6W	
R325	1-247-879-00	CARBON	100K	5%	1/6W	
R326	1-247-863-00	CARBON	22K	5%	1/6W	
R329	1-215-485-00	METAL	470K	1%	1/6W	
R330	1-215-485-00	METAL	470K	1%	1/6W	
R331	1-247-889-00	CARBON	270K	5%	1/6W	
R332	1-247-889-00	CARBON	270K	5%	1/6W	
R333	1-247-879-00	CARBON	100K	5%	1/6W	
R334	1-247-867-00	CARBON	33K	5%	1/6W	
R335	1-247-859-00	CARBON	15K	5%	1/6W	
R336	1-249-429-11	CARBON	10K	5%	1/6W	
R337	1-249-429-11	CARBON	10K	5%	1/6W	
R338	1-247-881-00	CARBON	120K	5%	1/6W	
R339	1-247-867-00	CARBON	33K	5%	1/6W	
R340	1-249-437-11	CARBON	47K	5%	1/6W	
R341	1-247-879-00	CARBON	100K	5%	1/6W	
R343	1-247-831-00	CARBON	1K	5%	1/6W	
R344	1-249-425-11	CARBON	4.7K	5%	1/6W	
R345	1-247-873-00	CARBON	56K	5%	1/6W	
R346	1-249-437-11	CARBON	47K	5%	1/6W	
R347	1-247-863-00	CARBON	22K	5%	1/6W	
R348	1-247-881-00	CARBON	120K	5%	1/6W	
R349	1-247-807-00	CARBON	100	5%	1/6W	
R350	1-247-903-00	CARBON	1M	5%	1/6W	
R351 ⚠	1-212-356-00	METAL OXIDE	0.47	5%	1W	F
R352	1-247-861-00	CARBON	18K	5%	1/6W	
R353	1-249-429-11	CARBON	10K	5%	1/6W	
R354	1-247-861-00	CARBON	18K	5%	1/6W	
R355	1-247-879-00	CARBON	100K	5%	1/6W	
R356	1-249-437-11	CARBON	47K	5%	1/6W	
R357	1-249-434-11	CARBON	27K	5%	1/6W	
R358	1-247-867-00	CARBON	33K	5%	1/6W	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description				Remark
R359	1-247-867-00	CARBON	33K	5%	1/6W	
R360	1-247-831-00	CARBON	1K	5%	1/6W	
R361	1-247-867-00	CARBON	33K	5%	1/6W	
R362	1-249-429-11	CARBON	10K	5%	1/6W	
R363	1-247-867-00	CARBON	33K	5%	1/6W	
R364	1-247-807-00	CARBON	100	5%	1/6W	
R365 ⚠	1-212-360-00	METAL OXIDE	1	5%	1W	F
R366	1-247-831-00	CARBON	1K	5%	1/6W	
R367 ⚠	1-212-368-00	METAL OXIDE	4.7	5%	1W	F
R368	1-247-833-00	CARBON	1.2K	5%	1/6W	
R369	1-247-833-00	CARBON	1.2K	5%	1/6W	
R370	1-247-847-00	CARBON	4.7K	5%	1/6W	
R371	1-247-847-00	CARBON	4.7K	5%	1/6W	
R372	1-247-831-00	CARBON	1K	5%	1/6W	
R373	1-249-429-11	CARBON	10K	5%	1/6W	
R374	1-247-859-00	CARBON	15K	5%	1/6W	
R375	1-247-879-00	CARBON	100K	5%	1/6W	
R376	1-247-895-00	CARBON	470K	5%	1/6W	
R377	1-249-437-11	CARBON	47K	5%	1/6W	
R378	1-247-879-00	CARBON	100K	5%	1/6W	
R379	1-249-429-11	CARBON	10K	5%	1/6W	
R380	1-249-437-11	CARBON	47K	5%	1/6W	
R381	1-247-863-00	CARBON	22K	5%	1/6W	
R382	1-215-485-00	METAL	470K	1%	1/6W	
R383	1-215-457-00	METAL	33K	1%	1/6W	
R384	1-247-837-00	CARBON	1.8K	5%	1/6W	
R385	1-247-869-00	CARBON	39K	5%	1/6W	
R388	1-247-891-00	CARBON	330K	5%	1/6W	
R389	1-247-903-00	CARBON	1M	5%	1/6W	
R390	1-247-831-00	CARBON	1K	5%	1/6W	
R391	1-249-419-11	CARBON	1.5K	5%	1/6W	
R392	1-249-429-11	CARBON	10K	5%	1/6W	
R393	1-247-859-00	CARBON	15K	5%	1/6W	
R394	1-247-879-00	CARBON	100K	5%	1/6W	
R395	1-247-883-00	CARBON	150K	5%	1/6W	
R396	1-247-859-00	CARBON	15K	5%	1/6W	
R397	1-247-867-00	CARBON	33K	5%	1/6W	
R398	1-247-867-00	CARBON	33K	5%	1/6W	
R399	1-247-850-00	CARBON	6.2K	5%	1/6W	
R400	1-247-903-00	CARBON	1M	5%	1/6W	
R401	1-247-879-00	CARBON	100K	5%	1/6W	
R402	1-247-889-00	CARBON	270K	5%	1/6W	
R403	1-247-895-00	CARBON	470K	5%	1/6W	
R404	1-249-437-11	CARBON	47K	5%	1/6W	
R405	1-247-861-00	CARBON	18K	5%	1/6W	
R406	1-247-859-00	CARBON	15K	5%	1/6W	
R407	1-247-831-00	CARBON	1K	5%	1/6W	
R408	1-247-863-00	CARBON	22K	5%	1/6W	
R409	1-247-863-00	CARBON	22K	5%	1/6W	
R410	1-247-867-00	CARBON	33K	5%	1/6W	
R413	1-249-437-11	CARBON	47K	5%	1/6W	
R415	1-249-437-11	CARBON	47K	5%	1/6W	
R417	1-247-857-00	CARBON	12K	5%	1/6W	
R418	1-247-859-00	CARBON	15K	5%	1/6W	
R419	1-249-421-11	CARBON	2.2K	5%	1/6W	
R420	1-249-437-11	CARBON	47K	5%	1/6W	
R421	1-247-843-00	CARBON	3.3K	5%	1/6W	
R422	1-249-429-11	CARBON	10K	5%	1/6W	
R425	1-249-437-11	CARBON	47K	5%	1/6W	
R426	1-249-437-11	CARBON	47K	5%	1/6W	
R427	1-247-859-00	CARBON	15K	5%	1/6W	
R428	1-249-434-11	CARBON	27K	5%	1/6W	
R429	1-249-429-11	CARBON	10K	5%	1/6W	
R430	1-247-831-00	CARBON	1K	5%	1/6W	
R431	1-249-429-11	CARBON	10K	5%	1/6W	
R440	1-247-877-00	CARBON	82K	5%	1/6W	
R442	1-249-437-11	CARBON	47K	5%	1/6W	
R443	1-249-437-11	CARBON	47K	5%	1/6W	
R448 ⚠	1-247-815-00	CARBON	220	5%	1/6W	
R449	1-247-851-00	CARBON	6.8K	5%	1/6W	
R450	1-249-437-11	CARBON	47K	5%	1/6W	
R451	1-249-429-11	CARBON	10K	5%	1/6W	
R452	1-249-437-11	CARBON	47K	5%	1/6W	
R453	1-247-867-00	CARBON	33K	5%	1/6W	
R454	1-249-437-11	CARBON	47K	5%	1/6W	
R455	1-249-437-11	CARBON	47K	5%	1/6W	
R456	1-247-879-00	CARBON	100K	5%	1/6W	
R457	1-249-437-11	CARBON	47K	5%	1/6W	
R458	1-249-429-11	CARBON	10K	5%	1/6W	
R459	1-249-421-11	CARBON	2.2K	5%	1/6W	
R460	1-247-859-00	CARBON	15K	5%	1/6W	
R461	1-247-863-00	CARBON	22K	5%	1/6W	
R462	1-247-891-00	CARBON	330K	5%	1/6W	
R464	1-249-437-11	CARBON	47K	5%	1/6W	
R465	1-249-429-11	CARBON	10K	5%	1/6W	
R466	1-247-837-00	CARBON	1.8K	5%	1/6W	
R467	1-247-831-00	CARBON	1K	5%	1/6W	
R468	1-249-419-11	CARBON	1.5K	5%	1/6W	
R470	1-247-843-00	CARBON	3.3K	5%	1/6W	
R471	1-247-861-00	CARBON	18K	5%	1/6W	
R472	1-247-903-00	CARBON	1M	5%	1/6W	
R473	1-247-903-00	CARBON	1M	5%	1/6W	
R474	1-247-849-00	CARBON	5.6K	5%	1/6W	
R475	1-249-469-11	CARBON	100K	5%	1/4W	
R480	1-249-429-11	CARBON	10K	5%	1/6W	
R482	1-247-862-00	CARBON	20K	5%	1/6W	
R483	1-247-859-00	CARBON	15K	5%	1/6W	
R484	1-249-425-11	CARBON	4.7K	5%	1/6W	
R486	1-249-437-11	CARBON	47K	5%	1/6W	
R487	1-249-437-11	CARBON	47K	5%	1/6W	
R488	1-247-887-00	CARBON	220K	5%	1/6W	
R490	1-247-847-00	CARBON	4.7K	5%	1/6W	
R491	1-249-437-11	CARBON	47K	5%	1/6W	
R492	1-249-437-11	CARBON	47K	5%	1/6W	
R501	1-249-437-11	CARBON	47K	5%	1/6W	
R502	1-247-859-00	CARBON	15K	5%	1/6W	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R503	1-249-421-11	CARBON	2.2K	5%	1/6W	
R504	1-247-803-00	CARBON	68	5%	1/6W	
R505	1-247-831-00	CARBON	1K	5%	1/6W	
R506	1-249-429-11	CARBON	10K	5%	1/6W	
R507	1-249-429-11	CARBON	10K	5%	1/6W	
R508	1-247-879-00	CARBON	100K	5%	1/6W	
R509	1-247-879-00	CARBON	100K	5%	1/6W	
R510	1-247-843-00	CARBON	3.3K	5%	1/6W	
R511	1-249-429-11	CARBON	10K	5%	1/6W	
R512	1-249-429-11	CARBON	10K	5%	1/6W	
R513	1-249-429-11	CARBON	10K	5%	1/6W	
R623	1-249-421-11	CARBON	2.2K	5%	1/6W	
R624	1-249-437-11	CARBON	47K	5%	1/6W	
R625	1-249-437-11	CARBON	47K	5%	1/6W	
R626	1-249-437-11	CARBON	47K	5%	1/6W	
R630	1-249-419-11	CARBON	1.5K	5%	1/6W	
R632	1-247-815-00	CARBON	220	5%	1/6W	

VARIABLE RESISTOR

Ref.No	Part No.	Description
RV101	1-228-991-00	RES, ADJ, CARBON 2.2K
RV102	1-228-270-00	RES, VAR, CARBON 10K
RV104	1-228-995-00	RES, ADJ, CARBON 22K
RV301	1-228-997-00	RES, ADJ, CARBON 100K
RV302	1-228-995-00	RES, ADJ, CARBON 22K
RV303	1-228-997-00	RES, ADJ, CARBON 100K
RV304	1-228-997-00	RES, ADJ, CARBON 100K
RV305	1-228-997-00	RES, ADJ, METAL GLAZE 100K
RV306	1-228-996-00	RES, ADJ, METAL GLAZE 47K
RV307	1-228-992-11	RES, ADJ, METAL GLAZE 3.3K
RV308	1-228-997-00	RES, ADJ, METAL GLAZE 100K
RV601	1-228-993-00	RES, ADJ, CARBON 4.7K
RV602	1-228-993-00	RES, ADJ, CARBON 4.7K
RV603	1-228-993-00	RES, ADJ, CARBON 4.7K
RV604	1-228-993-00	RES, ADJ, CARBON 4.7K

CRYSTAL

Ref.No	Part No.	Description
X101	1-527-726-00	VIBRATOR, CRYSTAL
X102	1-527-965-00	OSCILLATOR, CERAMIC
X103	1-527-822-00	OSCILLATOR, CERAMIC

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*A-6717-408-A DR-33 BOARD, COMPLETE
****

*3-683-631-01 CLAMP

CAPACITOR

Ref.No	Part No.	Description				Remark
C001	1-123-381-00	ELECT	2.2MF	20%	50V	
C002	1-123-381-00	ELECT	2.2MF	20%	50V	
C005	1-161-059-00	CERAMIC	0.047MF	10%	25V	
C006	1-129-794-00	FILM	0.003MF	5%	100V	
C007	1-129-794-00	FILM	0.003MF	5%	100V	
C008	1-161-059-00	CERAMIC	0.047MF	10%	25V	
C009	1-161-059-00	CERAMIC	0.047MF	10%	25V	
C010	1-123-330-00	ELECT	22MF	20%	16V	
C011	1-102-973-00	CERAMIC	100PF	5%	50V	
C012	1-161-059-00	CERAMIC	0.047MF	10%	25V	
C013	1-161-013-00	CERAMIC	0.01MF	10%	25V	
C014	1-161-013-00	CERAMIC	0.01MF	10%	25V	

CONNECTOR

Ref.No	Part No.	Description
CN001	*1-564-010-11	PIN, CONNECTOR 11P
CN002	*1-560-892-00	PIN, CONNECTOR 4P
CN003	*1-560-891-00	PIN, CONNECTOR 3P
CN004	*1-564-009-00	PIN, CONNECTOR 10P
CN005	*1-560-892-00	PIN, CONNECTOR 4P
CN006	*1-560-890-00	PIN, CONNECTOR 2P
CN007	*1-560-891-00	PIN, CONNECTOR 3P
CN008	*1-560-890-00	PIN, CONNECTOR 2P
CN010	*1-560-468-00	PIN, CONNECTOR 5P
CN011	*1-560-466-00	PIN, CONNECTOR 3P
CN012	*1-560-891-00	PIN, CONNECTOR 3P
CN013	*1-564-005-00	PIN, CONNECTOR 6P
CN014	*1-564-005-00	PIN, CONNECTOR 6P
CN015	*1-564-003-00	PIN, CONNECTOR 4P
CN017	*1-560-900-00	PIN, CONNECTOR 12P
CN018	*1-564-011-11	PIN, CONNECTOR 12P
CN019	*1-564-011-11	PIN, CONNECTOR 12P
CN020	*1-564-010-11	PIN, CONNECTOR 11P

IC

Ref.No	Part No.	Description
IC002	8-759-800-72	IC LA7205

RESISTOR

Ref.No	Part No.	Description				Remark
R001	1-247-831-00	CARBON	1K	5%	1/6W	
R002	1-247-815-00	CARBON	220	5%	1/6W	
R003	1-247-831-00	CARBON	1K	5%	1/6W	
R004	1-247-815-00	CARBON	220	5%	1/6W	
R019	1-247-861-00	CARBON	18K	5%	1/6W	
R020	1-247-862-00	CARBON	20K	5%	1/6W	
R021	1-247-873-00	CARBON	56K	5%	1/6W	

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*A-6721-248-A TA-36 BOARD, COMPLETE (ES MODEL)
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Part No.	Description
1-404-438-00	FILTER, SAW
*1-555-110-00	CABLE, PIN
*3-662-227-00	HOLDER (R-3), LED
3-671-893-00	CLAMP (LOW TYPE)
*3-674-390-00	HOLDER (B), LED
*3-683-631-01	CLAMP
3-701-748-00	CLAMP

When indicating parts by reference number, please include the board name.

TA-36

Ref.No	Part No.	Description			Remark
		BATTERY			
B701	1-528-132-00	BATTERY, STORAGE, NI-CD			
		CAPACITOR			
C001	1-102-529-00	CERAMIC	100PF	5%	50V
C002	1-102-529-00	CERAMIC	100PF	5%	50V
C003	1-102-947-00	CERAMIC	10PF	5%	50V
C004	1-102-523-00	CERAMIC	56PF	5%	50V
C005	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C006	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C007	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C008	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C009	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C010	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C011	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C012	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C013	1-123-369-00	ELECT	4.7MF	20%	25V
C014	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C015	1-161-059-00	CERAMIC	0.047MF	10%	25V
C016	1-102-529-00	CERAMIC	100PF	5%	50V
C017	1-102-963-00	CERAMIC	33PF	5%	50V
C018	1-102-504-00	CERAMIC	4PF	0.25PF	50V
C019	1-102-529-00	CERAMIC	100PF	5%	50V
C020	1-102-504-00	CERAMIC	4PF	0.25PF	50V
C021	1-102-963-00	CERAMIC	33PF	5%	50V
C022	1-123-333-00	ELECT	100MF	20%	16V
C023	1-161-013-00	CERAMIC	0.01MF	10%	25V
C024	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C025	1-123-379-00	ELECT	0.47MF	20%	50V
C026	1-102-973-00	CERAMIC	100PF	5%	50V
C027	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C028	1-123-286-00	ELECT	0.33MF	20%	50V
C029	1-161-013-00	CERAMIC	0.01MF	10%	25V
C030	1-101-361-00	CERAMIC	150PF	5%	50V
C031	1-123-380-00	ELECT	1MF	20%	50V
C032	1-130-014-00	FILM	470PF	5%	50V
C033	1-102-525-00	CERAMIC	68PF	5%	50V
C034	1-161-055-00	CERAMIC	0.022MF	10%	25V
C035	1-161-055-00	CERAMIC	0.022MF	10%	25V
C036	1-161-055-00	CERAMIC	0.022MF	10%	25V
C037	1-123-332-00	ELECT	47MF	20%	16V
C038	1-130-478-00	MYLAR	0.0039MF	5%	50V
C039	1-130-478-00	MYLAR	0.0039MF	5%	50V
C040	1-130-478-00	MYLAR	0.0039MF	5%	50V
C041	1-123-380-00	ELECT	1MF	20%	50V
C042	1-123-380-00	ELECT	1MF	20%	50V
C043	1-123-332-00	ELECT	47MF	20%	16V
C044	1-123-356-00	ELECT	10MF	20%	16V
C045	1-123-356-00	ELECT	10MF	20%	16V
C046	1-161-059-00	CERAMIC	0.047MF	10%	25V
C047	1-123-333-00	ELECT	100MF	20%	16V
C048	1-123-308-00	ELECT	220MF	20%	10V
C049	1-136-147-00	FILM	0.0033MF	5%	50V
C050	1-130-014-00	FILM	470PF	5%	50V
C051	1-161-055-00	CERAMIC	0.022MF	10%	25V
C052	1-161-059-00	CERAMIC	0.047MF	10%	25V
C053	1-136-244-11	FILM	0.1MF	2%	50V
C054	1-136-244-11	FILM	0.1MF	2%	50V
C055	1-123-330-00	ELECT	22MF	20%	16V
C056	1-136-243-11	FILM	0.047MF	2%	50V
C057	1-136-243-11	FILM	0.047MF	2%	50V
C058	1-123-333-00	ELECT	100MF	20%	16V
C059	1-123-333-00	ELECT	100MF	20%	16V
C060	1-123-356-00	ELECT	10MF	20%	16V
C061	1-161-013-00	CERAMIC	0.01MF	10%	25V
C062	1-123-356-00	ELECT	10MF	20%	16V
C063	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C064	1-161-013-00	CERAMIC	0.01MF	10%	25V
C065	1-102-963-00	CERAMIC	33PF	5%	50V
C066	1-130-493-00	MYLAR	0.068MF	5%	50V
C067	1-130-493-00	MYLAR	0.068MF	5%	50V
C068	1-130-495-00	MYLAR	0.1MF	5%	50V
C069	1-102-973-00	CERAMIC	100PF	5%	50V
C070	1-123-380-00	ELECT	1MF	20%	50V
C072	1-161-013-00	CERAMIC	0.01MF	10%	25V
C075	1-102-963-00	CERAMIC	33PF	5%	50V
C076	1-102-963-00	CERAMIC	33PF	5%	50V
C077	1-123-381-00	ELECT	2.2MF	20%	50V
C078	1-161-059-00	CERAMIC	0.047MF	10%	25V
C079	1-161-013-00	CERAMIC	0.01MF	10%	25V
C080	1-161-013-00	CERAMIC	0.01MF	10%	25V
C081	1-123-332-00	ELECT	47MF	20%	16V
C082	1-123-356-00	ELECT	10MF	20%	50V
C083	1-123-380-00	ELECT	1MF	20%	50V
C201	1-102-123-00	CERAMIC	0.0033MF	10%	50V
C301	1-123-356-00	ELECT	10MF	20%	50V
C401	1-123-318-00	ELECT	33MF	20%	16V
C402	1-102-121-00	CERAMIC	0.0022MF	10%	50V
C403	1-102-527-00	CERAMIC	82PF	5%	50V
C501	1-123-356-00	ELECT	10MF	20%	16V
C502	1-123-381-00	ELECT	2.2MF	20%	50V
C503	1-123-332-00	ELECT	47MF	20%	16V
C504	1-102-074-00	CERAMIC	0.001MF	10%	50V
C505	1-123-369-00	ELECT	4.7MF	20%	25V
C506	1-102-808-00	CERAMIC	6PF	1PF	50V
C508	1-102-816-00	CERAMIC	120PF	5%	50V
C511	1-123-369-00	ELECT	4.7MF	20%	25V
C512	1-123-332-00	ELECT	47MF	20%	16V
C513	1-161-013-00	CERAMIC	0.01MF	10%	25V
C601	1-101-004-00	CERAMIC	0.01MF		50V
C602	1-101-004-00	CERAMIC	0.01MF		50V
C603	1-123-356-00	ELECT	10MF	20%	16V
C604	1-123-382-00	ELECT	3.3MF	20%	50V
C605	1-101-001-00	CERAMIC	0.001MF		50V
C606	1-101-004-00	CERAMIC	0.01MF		50V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
C608	1-123-380-00	ELECT	1MF	20%	50V
C701	1-123-330-00	ELECT	22MF	20%	16V
C702	1-123-330-00	ELECT	22MF	20%	16V
C703	1-102-121-00	CERAMIC	0.0022MF	10%	50V
C704	1-123-381-00	ELECT	2.2MF	20%	50V
C705	1-123-330-00	ELECT	22MF	20%	16V
C706	1-123-308-00	ELECT	220MF	20%	10V
C800	1-101-004-00	CERAMIC	0.01MF		50V
C801	1-130-483-00	MYLAR	0.01MF	5%	50V
C802	1-136-164-00	MYLAR	0.082MF	5%	50V
C803	1-101-004-00	CERAMIC	0.01MF		50V
C804	1-123-608-00	ELECT	0.22MF	20%	50V
C805	1-123-332-00	ELECT	47MF	20%	16V
C806	1-123-608-00	ELECT	0.22MF	20%	50V
C901	1-123-332-00	ELECT	47MF	20%	16V
C902	1-102-111-00	CERAMIC	270PF	10%	50V
C903	1-130-474-00	MYLAR	0.0018MF	5%	50V
C904	1-123-332-00	ELECT	47MF	20%	16V
C905	1-123-332-00	ELECT	47MF	20%	16V
C906	1-123-369-00	ELECT	4.7MF	20%	25V
C907	1-130-473-00	MYLAR	0.0015MF	5%	50V
C908	1-130-483-00	MYLAR	0.01MF	5%	50V
C909	1-123-381-00	ELECT	2.2MF	20%	50V
C910	1-123-332-00	ELECT	47MF	20%	16V
C911	1-102-978-00	CERAMIC	220PF	5%	50V
C912	1-123-332-00	ELECT	47MF	20%	16V
C913	1-123-356-00	ELECT	10MF	20%	16V
C914	1-123-330-00	ELECT	22MF	20%	16V
C915	1-123-379-00	ELECT	0.47MF	20%	50V
C916	1-123-332-00	ELECT	47MF	20%	16V
C917	1-130-481-00	MYLAR	0.0068MF	5%	50V
C918	1-123-356-00	ELECT	10MF	20%	16V
C919	1-130-477-00	MYLAR	0.0033MF	5%	50V
C920	1-130-479-00	MYLAR	0.0047MF	5%	50V
C921	1-123-332-00	ELECT	47MF	20%	16V
C922	1-136-215-00	FILM	0.0068MF	10%	400V
C923	1-107-080-00	MICA	62PF	5%	50V
C951	1-123-332-00	ELECT	47MF	20%	16V

FILTER

Ref.No	Part No.	Description
CF001	1-527-840-00	FILTER, CERAMIC
CF002	1-527-839-00	FILTER, CERAMIC
CF003	1-527-822-00	OSCILLATOR, CERAMIC

CONNECTOR

Ref.No	Part No.	Description
CN001	*1-560-891-00	PIN, CONNECTOR 3P
CN002	*1-560-896-00	PIN, CONNECTOR 8P
CN003	*1-560-894-00	PIN, CONNECTOR 6P
CN004	*1-560-900-00	PIN, CONNECTOR 12P
CN501	*1-560-892-00	PIN, CONNECTOR 4P
CN502	*1-560-896-00	PIN, CONNECTOR 8P
CN901	*1-564-030-00	PIN, CONNECTOR 5P
CN902	*1-564-033-00	PIN, CONNECTOR 8P

TRIMMER

Ref.No	Part No.	Description	Remark
CT001	1-404-134-00	TRAP, CERAMIC (5.5MHZ)	

DIODE

Ref.No	Part No.	Description	Remark
D001	8-719-911-19	DIODE 1SS119	
D003	8-719-911-19	DIODE 1SS119	
D004	8-719-911-19	DIODE 1SS119	
D005	8-719-812-33	DIODE TLG123A	
D006	8-719-812-32	DIODE TLY123	
D007	8-719-812-31	DIODE TLR123	
D008	8-719-000-12	DIODE MC931	
D009	8-719-812-31	DIODE TLR123	
D010	8-719-200-02	DIODE 10E-2	
D011	8-719-911-19	DIODE 1SS119	
D301	8-719-000-12	DIODE MC931	
D401	8-719-000-06	DIODE MC921	
D402	8-719-911-19	DIODE 1SS119	
D505	8-719-911-19	DIODE 1SS119	
D508	8-719-911-19	DIODE 1SS119	
D601	8-719-911-19	DIODE 1SS119	
D602	8-719-911-19	DIODE 1SS119	
D603	8-719-911-19	DIODE 1SS119	
D604	8-719-911-19	DIODE 1SS119	
D605	8-719-911-19	DIODE 1SS119	
D607	8-719-911-19	DIODE 1SS119	
D608	8-719-911-19	DIODE 1SS119	
D609	8-719-911-19	DIODE 1SS119	
D701	8-719-911-19	DIODE 1SS119	
D702	8-719-911-19	DIODE 1SS119	
D703	8-719-100-31	DIODE RD5.1EB3	
D704	8-719-911-19	DIODE 1SS119	
D705	8-719-911-19	DIODE 1SS119	
D706	8-719-911-19	DIODE 1SS119	
D707	8-719-911-19	DIODE 1SS119	
D800	8-719-911-19	DIODE 1SS119	
D801	8-719-911-19	DIODE 1SS119	
D901	8-719-000-06	DIODE MC921	
D902	8-719-911-19	DIODE 1SS119	

IC

Ref.No	Part No.	Description	Remark
IC001	8-759-276-07	IC TA7607AP	
IC002	8-759-909-54	IC TDA2546A	
IC003	8-759-913-15	IC TDA3800GS	
IC004	8-759-145-58	IC UPC4558C	
IC005	8-759-602-16	IC M54572L	
IC006	8-759-157-40	IC UPC574J	
IC007	8-759-603-11	IC M50160-115SP	
IC008	8-759-600-66	IC M58653P	
IC009	8-759-105-50	IC UPD7507SC-068	
IC601	8-759-205-76	IC TC504013BP	
IC901	8-759-101-73	IC UPC1513HA	
IC902	8-759-802-11	IC LA7091	

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description	Remark
		COIL	
L001	1-408-397-00	MICRO INDUCTOR 1UH	
L002	1-408-592-41	MICRO INDUCTOR 1.2UH	
L003	1-408-406-00	MICRO INDUCTOR 5.6UH	
L004	1-408-406-00	MICRO INDUCTOR 5.6UH	
L005	1-408-604-00	MICRO INDUCTOR 12UH	
L006	1-408-408-00	MICRO INDUCTOR 8.2UH	
L007	1-408-403-00	MICRO INDUCTOR 3.3UH	
L008	1-408-397-00	MICRO INDUCTOR 1UH	
L009	1-408-421-00	MICRO INDUCTOR 100UH	
L501	1-408-421-00	MICRO INDUCTOR 100UH	
L502	1-408-417-00	MICRO INDUCTOR 47UH	
L701	1-407-168-XX	MICRO INDUCTOR 82UH	
L901	1-407-508-00	MICRO INDUCTOR 22MMH	
L902	1-407-510-00	MICRO INDUCTOR 27MMH	
L903	1-410-120-11	MICRO INDUCTOR 1.2MMH	
		VARIABLE COIL	
LV901	1-408-713-00	VARIABLE INDUCTOR	
		TRANSISTOR	
Q001	8-729-203-28	TRANSISTOR 2SC2216	
Q002	8-729-245-83	TRANSISTOR 2SC2458	
Q003	8-729-900-74	TRANSISTOR DTC143TS	
Q004	8-729-900-74	TRANSISTOR DTC143TS	
Q005 ⚠	**8-729-374-02**	**TRANSISTOR 2SB740**	
Q006	8-729-900-89	TRANSISTOR DTC144ES	
Q007	8-729-245-83	TRANSISTOR 2SC2458	
Q008	8-729-245-83	TRANSISTOR 2SC2458	
Q009	8-729-245-83	TRANSISTOR 2SC2458	
Q011	8-729-204-83	TRANSISTOR 2SA1048	
Q012	8-729-204-83	TRANSISTOR 2SA1048	
Q013	8-729-900-89	TRANSISTOR DTC144ES	
Q014	8-729-900-89	TRANSISTOR DTC144ES	
Q015	8-729-900-89	TRANSISTOR DTC144ES	
Q201	8-729-204-83	TRANSISTOR 2SA1048	
Q202	8-729-245-83	TRANSISTOR 2SC2458	
Q301	8-729-900-65	TRANSISTOR DTA144ES	
Q401	8-729-245-83	TRANSISTOR 2SC2458	
Q501	8-729-245-83	TRANSISTOR 2SC2458	
Q502	8-729-204-83	TRANSISTOR 2SA1048	
Q503	8-729-384-48	TRANSISTOR 2SA844	
Q504	8-729-245-83	TRANSISTOR 2SC2458	
Q505	8-729-245-83	TRANSISTOR 2SC2458	
Q506	8-729-245-83	TRANSISTOR 2SC2458	
Q507	8-729-245-83	TRANSISTOR 2SC2458	
Q508	8-729-900-80	TRANSISTOR DTC114ES	
Q509	8-729-204-83	TRANSISTOR 2SA1048	
Q601	8-729-900-89	TRANSISTOR DTC144ES	
Q602	8-729-245-83	TRANSISTOR 2SC2458	
Q603	8-729-245-83	TRANSISTOR 2SC2458	
Q605	8-729-900-89	TRANSISTOR DTC144ES	
Q606	8-729-245-83	TRANSISTOR 2SC2458	
Q607	8-729-245-83	TRANSISTOR 2SC2458	
Q608	8-729-245-83	TRANSISTOR 2SC2458	
Q609	8-729-245-83	TRANSISTOR 2SC2458	
Q610	8-729-900-89	TRANSISTOR DTC144ES	
Q701	8-729-177-32	TRANSISTOR 2SD773	
Q702	8-729-245-83	TRANSISTOR 2SC2458	
Q703	8-729-900-80	TRANSISTOR DTC114ES	
Q704	8-729-204-83	TRANSISTOR 2SA1048	
Q800	8-729-900-74	TRANSISTOR DTC143TS	
Q802	8-729-900-89	TRANSISTOR DTC144ES	
Q901	8-729-900-89	TRANSISTOR DTC144ES	
Q904	8-729-245-83	TRANSISTOR 2SC2458	
Q906	8-729-177-43	TRANSISTOR 2SD774	
Q907	8-729-245-83	TRANSISTOR 2SC2458	
		RESISTOR	
R001	1-249-421-11	CARBON 2.2K 5% 1/6W	
R002	1-247-847-00	CARBON 4.7K 5% 1/6W	
R003	1-247-815-00	CARBON 220 5% 1/6W	
R004	1-247-819-00	CARBON 330 5% 1/6W	
R005	1-247-813-00	CARBON 180 5% 1/6W	
R006	1-247-837-00	CARBON 1.8K 5% 1/6W	
R007	1-249-419-11	CARBON 1.5K 5% 1/6W	
R008	1-247-867-00	CARBON 33K 5% 1/6W	
R009	1-247-879-00	CARBON 100K 5% 1/6W	
R010	1-247-879-00	CARBON 100K 5% 1/6W	
R011	1-247-901-00	CARBON 820K 5% 1/6W	
R012	1-247-831-00	CARBON 1K 5% 1/6W	
R014	1-247-807-00	CARBON 100 5% 1/6W	
R015	1-247-817-00	CARBON 270 5% 1/6W	
R016	1-247-815-00	CARBON 220 5% 1/6W	
R017	1-247-847-00	CARBON 4.7K 5% 1/6W	
R018	1-247-829-00	CARBON 820 5% 1/6W	
R019	1-247-829-00	CARBON 820 5% 1/6W	
R020	1-247-829-00	CARBON 820 5% 1/6W	
R021	1-247-891-00	CARBON 330K 5% 1/6W	
R022	1-249-437-11	CARBON 47K 5% 1/6W	
R023	1-247-853-00	CARBON 8.2K 5% 1/6W	
R024	1-247-863-00	CARBON 22K 5% 1/6W	
R025	1-247-853-00	CARBON 8.2K 5% 1/6W	
R026	1-247-863-00	CARBON 22K 5% 1/6W	
R027	1-249-429-11	CARBON 10K 5% 1/6W	
R028	1-249-429-11	CARBON 10K 5% 1/6W	
R031	1-247-861-00	CARBON 18K 5% 1/6W	
R032	1-249-434-11	CARBON 27K 5% 1/6W	
R033	1-247-829-00	CARBON 820 5% 1/6W	
R034	1-247-831-00	CARBON 1K 5% 1/6W	
R035	1-215-487-00	METAL 560K 1% 1/6W	
R036	1-215-409-00	METAL 330 1% 1/6W	
R037	1-215-461-00	METAL 47K 1% 1/6W	
R038	1-215-460-00	METAL 43K 1% 1/6W	
R039	1-215-408-00	METAL 300 1% 1/6W	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R040	1-215-486-00	METAL	510K	1%	1/6W	
R041	1-247-831-00	CARBON	1K	5%	1/6W	
R042	1-206-670-00	METAL OXIDE	1.8K	5%	2W	F
R043	1-247-847-00	CARBON	4.7K	5%	1/6W	
R044	1-247-831-00	CARBON	1K	5%	1/6W	
R045	1-247-833-00	CARBON	1.2K	5%	1/6W	
R046	1-249-419-11	CARBON	1.5K	5%	1/6W	
R047	1-249-421-11	CARBON	2.2K	5%	1/6W	
R048	1-247-891-00	CARBON	330K	5%	1/6W	
R049	1-247-863-00	CARBON	22K	5%	1/6W	
R050	1-247-863-00	CARBON	22K	5%	1/6W	
R051	1-247-863-00	CARBON	22K	5%	1/6W	
R052	1-247-863-00	CARBON	22K	5%	1/6W	
R053	1-247-863-00	CARBON	22K	5%	1/6W	
R054	1-247-877-00	CARBON	82K	5%	1/6W	
R055	1-247-851-00	CARBON	6.8K	5%	1/6W	
R056	1-247-843-00	CARBON	3.3K	5%	1/6W	
R058	1-247-867-00	CARBON	33K	5%	1/6W	
R059	1-247-863-00	CARBON	22K	5%	1/6W	
R060	1-247-847-00	CARBON	4.7K	5%	1/6W	
R061	1-247-863-00	CARBON	22K	5%	1/6W	
R062	1-247-867-00	CARBON	33K	5%	1/6W	
R063	1-249-429-11	CARBON	10K	5%	1/6W	
R064	1-249-429-11	CARBON	10K	5%	1/6W	
R066	1-249-429-11	CARBON	10K	5%	1/6W	
R067	1-247-903-00	CARBON	1M	5%	1/6W	
R068	1-247-831-00	CARBON	1K	5%	1/6W	
R070	1-247-853-00	CARBON	8.2K	5%	1/6W	
R071	1-249-437-11	CARBON	47K	5%	1/6W	
R072	1-249-437-11	CARBON	47K	5%	1/6W	
R073	1-249-437-11	CARBON	47K	5%	1/6W	
R074	1-247-833-00	CARBON	1.2K	5%	1/6W	
R076	1-249-421-11	CARBON	2.2K	5%	1/6W	
R077	1-247-847-00	CARBON	4.7K	5%	1/6W	
R201	1-247-819-00	CARBON	330	5%	1/6W	
R202	1-247-887-00	CARBON	220K	5%	1/6W	
R203	1-247-845-00	CARBON	3.9K	5%	1/6W	
R204	1-247-827-00	CARBON	680	5%	1/6W	
R205	1-249-414-11	CARBON	560	5%	1/6W	
R301	1-249-429-11	CARBON	10K	5%	1/6W	
R302	1-249-429-11	CARBON	10K	5%	1/6W	
R303	1-247-849-00	CARBON	5.6K	5%	1/6W	
R401	1-247-831-00	CARBON	1K	5%	1/6W	
R402	1-247-823-00	CARBON	470	5%	1/6W	
R403	1-247-867-00	CARBON	33K	5%	1/6W	
R404	1-247-831-00	CARBON	1K	5%	1/6W	
R501	1-249-429-11	CARBON	10K	5%	1/6W	
R503	1-249-414-11	CARBON	560	5%	1/6W	
R504	1-249-429-11	CARBON	10K	5%	1/6W	
R505	1-247-847-00	CARBON	4.7K	5%	1/6W	
R507	1-247-833-00	CARBON	1.2K	5%	1/6W	
R508	1-247-831-00	CARBON	1K	5%	1/6W	
R509	1-247-849-00	CARBON	5.6K	5%	1/6W	
R510	1-247-847-00	CARBON	4.7K	5%	1/6W	
R511	1-249-429-11	CARBON	10K	5%	1/6W	
R512	1-247-857-00	CARBON	12K	5%	1/6W	
R513	1-247-831-00	CARBON	1K	5%	1/6W	
R514	1-247-807-00	CARBON	100	5%	1/6W	
R516	1-247-815-00	CARBON	220	5%	1/6W	
R517	1-249-414-11	CARBON	560	5%	1/6W	
R519	1-247-815-00	CARBON	220	5%	1/6W	
R523	1-247-847-00	CARBON	4.7K	5%	1/6W	
R524	1-247-807-00	CARBON	100	5%	1/6W	
R525	1-247-831-00	CARBON	1K	5%	1/6W	
R526	1-247-837-00	CARBON	1.8K	5%	1/6W	
R527	1-247-807-00	CARBON	100	5%	1/6W	
R550	1-247-799-00	CARBON	47	5%	1/6W	
R601	1-249-429-11	CARBON	10K	5%	1/6W	
R602	1-249-429-11	CARBON	10K	5%	1/6W	
R603	1-249-429-11	CARBON	10K	5%	1/6W	
R604	1-249-429-11	CARBON	10K	5%	1/6W	
R605	1-249-429-11	CARBON	10K	5%	1/6W	
R606	1-249-429-11	CARBON	10K	5%	1/6W	
R607	1-249-429-11	CARBON	10K	5%	1/6W	
R608	1-249-434-11	CARBON	27K	5%	1/6W	
R609	1-247-849-00	CARBON	5.6K	5%	1/6W	
R610	1-247-867-00	CARBON	33K	5%	1/6W	
R611	1-247-867-00	CARBON	33K	5%	1/6W	
R612	1-247-843-00	CARBON	3.3K	5%	1/6W	
R613	1-249-429-11	CARBON	10K	5%	1/6W	
R614	1-247-861-00	CARBON	18K	5%	1/6W	
R615	1-247-869-00	CARBON	39K	5%	1/6W	
R616	1-249-421-11	CARBON	2.2K	5%	1/6W	
R617	1-249-437-11	CARBON	47K	5%	1/6W	
R618	1-249-429-11	CARBON	10K	5%	1/6W	
R619	1-247-847-00	CARBON	4.7K	5%	1/6W	
R620	1-249-429-11	CARBON	10K	5%	1/6W	
R622	1-249-429-11	CARBON	10K	5%	1/6W	
R701	1-247-791-00	CARBON	22	5%	1/6W	
R702	1-247-811-00	CARBON	150	5%	1/6W	
R703	1-247-831-00	CARBON	1K	5%	1/6W	
R704	1-247-831-00	CARBON	1K	5%	1/6W	
R705	1-247-819-00	CARBON	330	5%	1/6W	
R706	1-249-429-11	CARBON	10K	5%	1/6W	
R707	1-249-429-11	CARBON	10K	5%	1/6W	
R800	1-247-847-00	CARBON	4.7K	5%	1/6W	
R801	1-247-847-00	CARBON	4.7K	5%	1/6W	
R802	⚠ 1-212-853-00	FUSIBLE	6.8	5%	1/4W	F
R805	1-249-429-11	CARBON	10K	5%	1/6W	
R806	1-247-843-00	CARBON	3.3K	5%	1/6W	
R807	1-249-437-11	CARBON	47K	5%	1/6W	
R820	1-247-869-00	CARBON	39K	5%	1/6W	
R821	1-247-861-00	CARBON	18K	5%	1/6W	
R901	1-249-429-11	CARBON	10K	5%	1/6W	
R902	1-247-783-00	CARBON	10	5%	1/6W	
R903	1-247-859-00	CARBON	15K	5%	1/6W	

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When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R904	1-247-831-00	CARBON	1K	5%	1/6W	
R905	1-247-821-00	CARBON	390	5%	1/6W	
R906	1-247-861-00	CARBON	18K	5%	1/6W	
R907	1-247-885-00	CARBON	180K	5%	1/6W	
R908	1-249-429-11	CARBON	10K	5%	1/6W	
R909	1-247-867-00	CARBON	33K	5%	1/6W	
R912	1-247-899-00	CARBON	680K	5%	1/6W	
R913	1-247-867-00	CARBON	33K	5%	1/6W	
R914	1-247-829-00	CARBON	820	5%	1/6W	
R915	1-249-429-11	CARBON	10K	5%	1/6W	
R916	1-247-831-00	CARBON	1K	5%	1/6W	
R917	1-247-807-00	CARBON	100	5%	1/6W	
R919 ⚠	1-212-853-00	FUSIBLE	6.8	5%	1/4W	F
R921	1-247-831-00	CARBON	1K	5%	1/6W	
R922	1-247-859-00	CARBON	15K	5%	1/6W	
R923	1-247-077-00	CARBON	3.3	5%	1/4W	
R925	1-249-437-11	CARBON	47K	5%	1/6W	
R926	1-247-853-00	CARBON	8.2K	5%	1/6W	
R950	1-247-857-00	CARBON	12K	5%	1/6W	
R951	1-247-867-00	CARBON	33K	5%	1/6W	

VARIABLE RESISTOR

Ref.No	Part No.	Description
RV001	1-228-993-00	RES, ADJ, CARBON 4.7K
RV002	1-228-995-00	RES, ADJ, CARBON 22K
RV901	1-228-994-00	RES, ADJ, CARBON 10K
RV902	1-228-998-00	RES, ADJ, METAL GLAZE 220K

RELAY

Ref.No	Part No.	Description
RY901	1-515-418-00	RELAY

SWITCH

Ref.No	Part No.	Description
S001	1-553-997-00	SWITCH, KEY BOARD
S002	1-553-997-00	SWITCH, KEY BOARD
S003	1-553-997-00	SWITCH, KEY BOARD
S004	1-553-997-00	SWITCH, KEY BOARD
S005	1-553-997-00	SWITCH, KEY BOARD
S006	1-553-997-00	SWITCH, KEY BOARD
S007	1-553-997-00	SWITCH, KEY BOARD

TRANSFORMER

Ref.No	Part No.	Description
T001	1-404-068-00	COIL, VIF
T002	1-404-068-00	COIL, VIF
T003	1-404-427-00	VIFT
T004	1-404-427-00	VIFT
T005	1-404-477-00	COIL, IF
T006	1-404-465-12	COIL, VIF (MOLD TYPE)
T007	1-404-477-00	COIL, IF
T008	1-404-619-11	COIL, IF
T701	1-446-571-00	TRANSFORMER, CONVERTOR
T901	1-433-275-00	TRANSFORMER, BIAS OSCILLATOR

TUNER

Ref.No	Part No.	Description
TU001 ⚠	1-463-577-31	TUNER, ET (BT-883AD)

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
	*A-6721-258-A	TA-37 BOARD, COMPLETE (E MODEL) **********************	
	*1-555-110-00	CABLE, PIN	
	*3-662-227-00	HOLDER (R-3), LED	
	3-671-893-00	CLAMP (LOW TYPE)	
	*3-674-390-00	HOLDER (B), LED	
	*3-683-631-01	CLAMP	
	3-701-748-00	CLAMP	
	*4-336-029-00	PLATE, SHIELD	

BATTERY

Ref.No	Part No.	Description
B701	1-528-132-00	BATTERY, STORAGE, NI-CD

CAPACITOR

Ref.No	Part No.	Description			
C001	1-102-529-00	CERAMIC	100PF	5%	50V
C002	1-102-529-00	CERAMIC	100PF	5%	50V
C003	1-102-947-00	CERAMIC	10PF	5%	50V
C004	1-102-523-00	CERAMIC	56PF	5%	50V
C005	1-161-013-00	CERAMIC	0.01MF	10%	25V
C006	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C007	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C008	1-102-074-00	CERAMIC	0.001MF	10%	50V
C009	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C010	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C011	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C012	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C013	1-123-369-00	ELECT	4.7MF	20%	25V
C014	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C015	1-161-059-00	CERAMIC	0.047MF	10%	25V
C016	1-102-529-00	CERAMIC	100PF	5%	50V
C017	1-102-963-00	CERAMIC	33PF	5%	50V
C018	1-102-504-00	CERAMIC	4PF	0.25PF	50V
C019	1-102-529-00	CERAMIC	100PF	5%	50V
C020	1-102-504-00	CERAMIC	4PF	0.25PF	50V
C021	1-102-963-00	CERAMIC	33PF	5%	50V
C022	1-123-333-00	ELECT	100MF	20%	16V
C023	1-161-013-00	CERAMIC	0.01MF	10%	25V
C024	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C025	1-123-379-00	ELECT	0.47MF	20%	50V
C058	1-123-333-00	ELECT	100MF	20%	16V
C059	1-123-333-00	ELECT	100MF	20%	16V
C060	1-123-356-00	ELECT	10MF	20%	16V
C061	1-161-013-00	CERAMIC	0.01MF	10%	25V
C062	1-123-356-00	ELECT	10MF	20%	16V

Ref.No	Part No.	Description			Remark
C063	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C064	1-161-013-00	CERAMIC	0.01MF	10%	25V
C065	1-102-963-00	CERAMIC	33PF	5%	50V
C066	1-130-493-00	MYLAR	0.068MF	5%	50V
C067	1-130-493-00	MYLAR	0.068MF	5%	50V
C068	1-130-495-00	MYLAR	0.1MF	5%	50V
C069	1-102-973-00	CERAMIC	100PF	5%	50V
C070	1-123-380-00	ELECT	1MF	20%	50V
C072	1-161-013-00	CERAMIC	0.01MF	10%	25V
C073	1-161-047-00	CERAMIC	0.0047MF	20%	25V
C074	1-102-116-00	CERAMIC	680PF	10%	50V
C075	1-102-963-00	CERAMIC	33PF	5%	50V
C076	1-102-963-00	CERAMIC	33PF	5%	50V
C077	1-123-381-00	ELECT	2.2MF	20%	50V
C078	1-161-059-00	CERAMIC	0.047MF	10%	25V
C079	1-161-013-00	CERAMIC	0.01MF	10%	25V
C080	1-161-013-00	CERAMIC	0.01MF	10%	25V
C081	1-123-332-00	ELECT	47MF	20%	16V
C082	1-123-356-00	ELECT	10MF	20%	50V
C083	1-123-332-00	ELECT	47MF	20%	16V
C101	1-102-976-00	CERAMIC	180PF	5%	50V
C102	1-161-013-00	CERAMIC	0.01MF	10%	25V
C103	1-123-318-00	ELECT	33MF	20%	16V
C104	1-102-959-00	CERAMIC	22PF	5%	50V
C106	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C107	1-161-013-00	CERAMIC	0.01MF	10%	25V
C108	1-161-013-00	CERAMIC	0.01MF	10%	25V
C109	1-102-959-00	CERAMIC	22PF	5%	50V
C113	1-102-959-00	CERAMIC	22PF	5%	50V
C115	1-161-013-00	CERAMIC	0.01MF	10%	25V
C116	1-123-380-00	ELECT	1MF	20%	50V
C117	1-123-333-00	ELECT	100MF	20%	16V
C118	1-161-059-00	CERAMIC	0.047MF	10%	25V
C150	1-101-880-00	CERAMIC	47PF	5%	50V
C201	1-102-123-00	CERAMIC	0.0033MF	10%	50V
C301	1-123-356-00	ELECT	10MF	20%	50V
C501	1-123-356-00	ELECT	10MF	20%	16V
C502	1-123-381-00	ELECT	2.2MF	20%	50V
C503	1-123-332-00	ELECT	47MF	20%	16V
C504	1-102-074-00	CERAMIC	0.001MF	10%	50V
C505	1-123-369-00	ELECT	4.7MF	20%	25V
C506	1-102-808-00	CERAMIC	6PF	1PF	50V
C508	1-102-816-00	CERAMIC	120PF	5%	50V
C511	1-123-369-00	ELECT	4.7MF	20%	25V
C512	1-123-332-00	ELECT	47MF	20%	16V
C513	1-161-013-00	CERAMIC	0.01MF	10%	25V
C601	1-101-004-00	CERAMIC	0.01MF		50V
C602	1-101-004-00	CERAMIC	0.01MF		50V
C603	1-123-356-00	ELECT	10MF	20%	16V
C604	1-123-382-00	ELECT	3.3MF	20%	50V
C605	1-101-001-00	CERAMIC	0.001MF		50V
C606	1-101-004-00	CERAMIC	0.01MF		50V
C608	1-123-380-00	ELECT	1MF	20%	50V

Ref.No	Part No.	Description			Remark
C701	1-123-330-00	ELECT	22MF	20%	16V
C702	1-123-330-00	ELECT	22MF	20%	16V
C703	1-102-121-00	CERAMIC	0.0022MF	10%	50V
C704	1-123-381-00	ELECT	2.2MF	20%	50V
C705	1-123-330-00	ELECT	22MF	20%	16V
C706	1-123-308-00	ELECT	220MF	20%	10V
C800	1-101-004-00	CERAMIC	0.01MF		50V
C801	1-130-483-00	MYLAR	0.01MF	5%	50V
C802	1-136-164-00	MYLAR	0.082MF	5%	50V
C803	1-101-004-00	CERAMIC	0.01MF		50V
C804	1-123-608-00	ELECT	0.22MF	20%	50V
C805	1-123-332-00	ELECT	47MF	20%	16V
C806	1-123-608-00	ELECT	0.22MF	20%	50V
C901	1-123-332-00	ELECT	47MF	20%	16V
C902	1-102-111-00	CERAMIC	270PF	10%	50V
C903	1-130-474-00	MYLAR	0.0018MF	5%	50V
C904	1-123-332-00	ELECT	47MF	20%	16V
C905	1-123-332-00	ELECT	47MF	20%	16V
C906	1-123-369-00	ELECT	4.7MF	20%	25V
C907	1-130-473-00	MYLAR	0.0015MF	5%	50V
C908	1-130-483-00	MYLAR	0.01MF	5%	50V
C909	1-123-381-00	ELECT	2.2MF	20%	50V
C910	1-123-332-00	ELECT	47MF	20%	16V
C911	1-102-978-00	CERAMIC	220PF	5%	50V
C912	1-123-332-00	ELECT	47MF	20%	16V
C913	1-123-356-00	ELECT	10MF	20%	16V
C914	1-123-330-00	ELECT	22MF	20%	16V
C915	1-123-379-00	ELECT	0.47MF	20%	50V
C916	1-123-332-00	ELECT	47MF	20%	16V
C917	1-130-481-00	MYLAR	0.0068MF	5%	50V
C918	1-123-356-00	ELECT	10MF	20%	16V
C919	1-130-477-00	MYLAR	0.0033MF	5%	50V
C920	1-130-479-00	MYLAR	0.0047MF	5%	50V
C921	1-123-332-00	ELECT	47MF	20%	16V
C922	1-136-215-00	FILM	0.0068MF	10%	400V
C923	1-107-080-00	MICA	62PF	5%	50V
C951	1-123-332-00	ELECT	47MF	20%	16V

DISCRIMINATOR

CD101	1-404-380-00	DISCRIMINATOR, CERAMIC 5.5MHZ

FILTER

CF003	1-527-822-00	OSCILLATOR, CERAMIC
CF101	1-527-263-00	CERAMIC FILTER (5.5MHZ)

CONNECTOR

CN001	*1-560-891-00	PIN, CONNECTOR 3P
CN002	*1-560-896-00	PIN, CONNECTOR 8P
CN003	*1-560-894-00	PIN, CONNECTOR 6P
CN004	*1-560-900-00	PIN, CONNECTOR 12P
CN501	*1-560-892-00	PIN, CONNECTOR 4P
CN502	*1-560-896-00	PIN, CONNECTOR 8P

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description	Remark
CN901	*1-564-030-00	PIN, CONNECTOR 5P	
CN902	*1-564-033-00	PIN, CONNECTOR 8P	
		TRIMMER	
CT001	1-404-134-00	TRAP, CERAMIC (5.5MHZ)	
CT101	1-409-333-00	TRAP, CERAMIC (6.0MHZ)	
		DIODE	
D003	8-719-911-19	DIODE 1SS119	
D005	8-719-812-33	DIODE TLG123A	
D006	8-719-812-31	DIODE TLR123	
D007	8-719-812-31	DIODE TLR123	
D008	8-719-000-12	DIODE MC931	
D009	8-719-812-32	DIODE TLY123	
D010	8-719-200-02	DIODE 10E-2	
D101	8-719-911-19	DIODE 1SS119	
D301	8-719-000-12	DIODE MC931	
D302	8-719-911-19	DIODE 1SS119	
D402	8-719-911-19	DIODE 1SS119	
D505	8-719-911-19	DIODE 1SS119	
D508	8-719-911-19	DIODE 1SS119	
D601	8-719-911-19	DIODE 1SS119	
D602	8-719-911-19	DIODE 1SS119	
D603	8-719-911-19	DIODE 1SS119	
D604	8-719-911-19	DIODE 1SS119	
D605	8-719-911-19	DIODE 1SS119	
D607	8-719-911-19	DIODE 1SS119	
D608	8-719-911-19	DIODE 1SS119	
D609	8-719-911-19	DIODE 1SS119	
D701	8-719-911-19	DIODE 1SS119	
D702	8-719-911-19	DIODE 1SS119	
D703	8-719-100-31	DIODE RD5.1EB3	
D704	8-719-911-19	DIODE 1SS119	
D705	8-719-911-19	DIODE 1SS119	
D706	8-719-911-19	DIODE 1SS119	
D707	8-719-911-19	DIODE 1SS119	
D800	8-719-911-19	DIODE 1SS119	
D801	8-719-911-19	DIODE 1SS119	
D901	8-719-000-06	DIODE MC921	
D902	8-719-911-19	DIODE 1SS119	
		IC	
IC001	8-759-276-07	IC TA7607AP	
IC005	8-759-602-16	IC M54572L	
IC006	8-759-157-40	IC UPC574J	
IC007	8-759-603-11	IC M50160-115SP	
IC008	8-759-600-66	IC M58653P	
IC009	8-759-105-50	IC UPD7507SC-068	
IC101	8-759-103-70	IC UPC1391HA	
IC601	8-759-205-76	IC TC504013BP	
IC901	8-759-101-73	IC UPC1513HA	
IC902	8-759-802-11	IC LA7091	

Ref.No	Part No.	Description	Remark
		COIL	
L001	1-408-397-00	MICRO INDUCTOR 1UH	
L002	1-408-397-00	MICRO INDUCTOR 1UH	
L003	1-408-406-00	MICRO INDUCTOR 5.6UH	
L004	1-408-406-00	MICRO INDUCTOR 5.6UH	
L005	1-408-408-00	MICRO INDUCTOR 8.2UH	
L009	1-408-421-00	MICRO INDUCTOR 100UH	
L101	1-408-604-00	MICRO INDUCTOR 12UH	
L102	1-408-406-00	MICRO INDUCTOR 5.6UH	
L103	1-408-413-00	MICRO INDUCTOR 22UH	
L104	1-408-412-00	MICRO INDUCTOR 18UH	
L106	1-408-421-00	MICRO INDUCTOR 100UH	
L501	1-408-421-00	MICRO INDUCTOR 100UH	
L502	1-408-417-00	MICRO INDUCTOR 47UH	
L701	1-407-168-XX	MICRO INDUCTOR 82UH	
L901	1-407-508-00	MICRO INDUCTOR 22MMH	
L902	1-407-510-00	MICRO INDUCTOR 27MMH	
L903	1-410-120-11	MICRO INDUCTOR 1.2MMH	
		VARIABLE COIL	
LV901	1-408-713-00	VARIABLE INDUCTOR	
		TRANSISTOR	
Q001	8-729-203-28	TRANSISTOR 2SC2717	
Q005	**⚠ 8-729-374-02**	**TRANSISTOR 2SB740**	
Q006	8-729-900-89	TRANSISTOR DTC144ES	
Q007	8-729-245-83	TRANSISTOR 2SC2458	
Q008	8-729-245-83	TRANSISTOR 2SC2458	
Q009	8-729-245-83	TRANSISTOR 2SC2458	
Q011	8-729-204-83	TRANSISTOR 2SA1048	
Q012	8-729-204-83	TRANSISTOR 2SA1048	
Q013	8-729-900-89	TRANSISTOR DTC144ES	
Q015	8-729-900-89	TRANSISTOR DTC144ES	
Q101	8-729-245-83	TRANSISTOR 2SC2458	
Q106	8-729-900-74	TRANSISTOR DTC143TS	
Q201	8-729-204-83	TRANSISTOR 2SA1048	
Q202	8-729-245-83	TRANSISTOR 2SC2458	
Q301	8-729-900-65	TRANSISTOR DTA144ES	
Q501	8-729-245-83	TRANSISTOR 2SC2458	
Q502	8-729-204-83	TRANSISTOR 2SA1048	
Q503	8-729-117-54	TRANSISTOR 2SA1175	
Q504	8-729-245-83	TRANSISTOR 2SC2458	
Q505	8-729-245-83	TRANSISTOR 2SC2458	
Q506	8-729-245-83	TRANSISTOR 2SC2458	
Q507	8-729-245-83	TRANSISTOR 2SC2458	
Q508	8-729-900-80	TRANSISTOR DTC114ES	
Q509	8-729-204-83	TRANSISTOR 2SA1048	
Q601	8-729-900-89	TRANSISTOR DTC144ES	
Q602	8-729-245-83	TRANSISTOR 2SC2458	
Q603	8-729-245-83	TRANSISTOR 2SC2458	
Q605	8-729-900-89	TRANSISTOR DTC144ES	
Q606	8-729-245-83	TRANSISTOR 2SC2458	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
Q607	8-729-245-83	TRANSISTOR 2SC2458				
Q608	8-729-245-83	TRANSISTOR 2SC2458				
Q609	8-729-245-83	TRANSISTOR 2SC2458				
Q610	8-729-900-89	TRANSISTOR DTC144ES				
Q701	8-729-177-32	TRANSISTOR 2SD773				
Q702.	8-729-245-83	TRANSISTOR 2SC2458				
Q703	8-729-900-80	TRANSISTOR DTC114ES				
Q704	8-729-204-83	TRANSISTOR 2SA1048				
Q800	8-729-900-89	TRANSISTOR DTC144ES				
Q802	8-729-900-89	TRANSISTOR DTC144ES				
Q901	8-729-900-89	TRANSISTOR DTC144ES				
Q904	8-729-245-83	TRANSISTOR 2SC2458				
Q906	8-729-177-43	TRANSISTOR 2SD774				
Q907	8-729-245-83	TRANSISTOR 2SC2458				
		RESISTOR				
R001	1-249-421-11	CARBON	2.2K	5%	1/6W	
R002	1-247-847-00	CARBON	4.7K	5%	1/6W	
R003	1-247-815-00	CARBON	220	5%	1/6W	
R004	1-247-819-00	CARBON	330	5%	1/6W	
R005	1-247-813-00	CARBON	180	5%	1/6W	
R006	1-247-837-00	CARBON	1.8K	5%	1/6W	
R007	1-249-419-11	CARBON	1.5K	5%	1/6W	
R008	1-247-867-00	CARBON	33K	5%	1/6W	
R009	1-247-879-00	CARBON	100K	5%	1/6W	
R010	1-247-879-00	CARBON	100K	5%	1/6W	
R011	1-247-901-00	CARBON	820K	5%	1/6W	
R012	1-247-831-00	CARBON	1K	5%	1/6W	
R013	1-247-815-00	CARBON	220	5%	1/6W	
R042	1-206-670-00	METAL OXIDE	1.8K	5%	2W	F
R043	1-247-847-00	CARBON	4.7K	5%	1/6W	
R044	1-247-831-00	CARBON	1K	5%	1/6W	
R045	1-247-833-00	CARBON	1.2K	5%	1/6W	
R046	1-249-421-11	CARBON	2.2K	5%	1/6W	
R047	1-249-421-11	CARBON	2.2K	5%	1/6W	
R048	1-247-891-00	CARBON	330K	5%	1/6W	
R049	1-247-863-00	CARBON	22K	5%	1/6W	
R050	1-247-863-00	CARBON	22K	5%	1/6W	
R051	1-247-863-00	CARBON	22K	5%	1/6W	
R052	1-247-863-00	CARBON	22K	5%	1/6W	
R053	1-247-863-00	CARBON	22K	5%	1/6W	
R054	1-247-877-00	CARBON	82K	5%	1/6W	
R055	1-247-851-00	CARBON	6.8K	5%	1/6W	
R056	1-247-843-00	CARBON	3.3K	5%	1/6W	
R058	1-247-867-00	CARBON	33K	5%	1/6W	
R059	1-247-863-00	CARBON	22K	5%	1/6W	
R060	1-247-847-00	CARBON	4.7K	5%	1/6W	
R061	1-247-863-00	CARBON	22K	5%	1/6W	
R062	1-247-867-00	CARBON	33K	5%	1/6W	
R063	1-249-429-11	CARBON	10K	5%	1/6W	
R064	1-249-429-11	CARBON	10K	5%	1/6W	
R065	1-249-429-11	CARBON	10K	5%	1/6W	
R066	1-249-429-11	CARBON	10K	5%	1/6W	

Ref.No	Part No.	Description				Remark
R067	1-247-903-00	CARBON	1M	5%	1/6W	
R068	1-247-831-00	CARBON	1K	5%	1/6W	
R070	1-247-853-00	CARBON	8.2K	5%	1/6W	
R071	1-249-437-11	CARBON	47K	5%	1/6W	
R072	1-249-437-11	CARBON	47K	5%	1/6W	
R073	1-249-437-11	CARBON	47K	5%	1/6W	
R074	1-247-833-00	CARBON	1.2K	5%	1/6W	
R076	1-249-419-11	CARBON	1.5K	5%	1/6W	
R077	1-247-847-00	CARBON	4.7K	5%	1/6W	
R101	1-247-807-00	CARBON	100	5%	1/6W	
R102	1-247-817-00	CARBON	270	5%	1/6W	
R103	1-247-815-00	CARBON	220	5%	1/6W	
R104	1-247-829-00	CARBON	820	5%	1/6W	
R105	1-247-819-00	CARBON	330	5%	1/6W	
R108	1-247-847-00	CARBON	4.7K	5%	1/6W	
R109	1-247-863-00	CARBON	22K	5%	1/6W	
R110	1-247-831-00	CARBON	1K	5%	1/6W	
R111	1-247-815-00	CARBON	220	5%	1/6W	
R113	1-247-831-00	CARBON	1K	5%	1/6W	
R115	1-249-437-11	CARBON	47K	5%	1/6W	
R116	1-247-891-00	CARBON	330K	5%	1/6W	
R201	1-247-819-00	CARBON	330	5%	1/6W	
R202	1-247-887-00	CARBON	220K	5%	1/6W	
R203	1-247-845-00	CARBON	3.9K	5%	1/6W	
R204	1-247-827-00	CARBON	680	5%	1/6W	
R205	1-249-414-11	CARBON	560	5%	1/6W	
R301	1-249-429-11	CARBON	10K	5%	1/6W	
R302	1-249-429-11	CARBON	10K	5%	1/6W	
R303	1-247-849-00	CARBON	5.6K	5%	1/6W	
R501	1-249-429-11	CARBON	10K	5%	1/6W	
R503	1-249-414-11	CARBON	560	5%	1/6W	
R504	1-249-429-11	CARBON	10K	5%	1/6W	
R505	1-247-847-00	CARBON	4.7K	5%	1/6W	
R507	1-247-833-00	CARBON	1.2K	5%	1/6W	
R508	1-247-831-00	CARBON	1K	5%	1/6W	
R509	1-247-849-00	CARBON	5.6K	5%	1/6W	
R510	1-247-847-00	CARBON	4.7K	5%	1/6W	
R511	1-249-429-11	CARBON	10K	5%	1/6W	
R512	1-247-857-00	CARBON	12K	5%	1/6W	
R513	1-247-831-00	CARBON	1K	5%	1/6W	
R514	1-247-807-00	CARBON	100	5%	1/6W	
R516	1-247-815-00	CARBON	220	5%	1/6W	
R517	1-249-414-11	CARBON	560	5%	1/6W	
R519	1-247-815-00	CARBON	220	5%	1/6W	
R523	1-247-847-00	CARBON	4.7K	5%	1/6W	
R524	1-247-807-00	CARBON	100	5%	1/6W	
R525	1-247-831-00	CARBON	1K	5%	1/6W	
R526	1-247-837-00	CARBON	1.8K	5%	1/6W	
R527	1-247-807-00	CARBON	100	5%	1/6W	
R550	1-247-799-00	CARBON	47	5%	1/6W	
R601	1-249-429-11	CARBON	10K	5%	1/6W	
R602	1-249-429-11	CARBON	10K	5%	1/6W	
R603	1-249-429-11	CARBON	10K	5%	1/6W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R604	1-249-429-11	CARBON	10K	5%	1/6W	
R605	1-249-429-11	CARBON	10K	5%	1/6W	
R606	1-249-429-11	CARBON	10K	5%	1/6W	
R607	1-249-429-11	CARBON	10K	5%	1/6W	
R608	1-249-434-11	CARBON	27K	5%	1/6W	
R609	1-247-849-00	CARBON	5.6K	5%	1/6W	
R610	1-247-867-00	CARBON	33K	5%	1/6W	
R611	1-247-867-00	CARBON	33K	5%	1/6W	
R612	1-247-843-00	CARBON	3.3K	5%	1/6W	
R613	1-249-429-11	CARBON	10K	5%	1/6W	
R614	1-247-861-00	CARBON	18K	5%	1/6W	
R615	1-247-869-00	CARBON	39K	5%	1/6W	
R616	1-249-421-11	CARBON	2.2K	5%	1/6W	
R617	1-249-437-11	CARBON	47K	5%	1/6W	
R618	1-249-429-11	CARBON	10K	5%	1/6W	
R619	1-247-847-00	CARBON	4.7K	5%	1/6W	
R620	1-249-429-11	CARBON	10K	5%	1/6W	
R622	1-249-429-11	CARBON	10K	5%	1/6W	
R701	1-247-791-00	CARBON	22	5%	1/6W	
R702	1-247-811-00	CARBON	150	5%	1/6W	
R703	1-247-831-00	CARBON	1K	5%	1/6W	
R704	1-247-831-00	CARBON	1K	5%	1/6W	
R705	1-247-819-00	CARBON	330	5%	1/6W	
R706	1-249-429-11	CARBON	10K	5%	1/6W	
R707	1-249-429-11	CARBON	10K	5%	1/6W	
R800	1-247-847-00	CARBON	4.7K	5%	1/6W	
R801	1-247-847-00	CARBON	4.7K	5%	1/6W	
R802 ⚠	1-212-853-00	FUSIBLE	6.8	5%	1/4W	F
R805	1-249-429-11	CARBON	10K	5%	1/6W	
R806	1-247-843-00	CARBON	3.3K	5%	1/6W	
R807	1-249-437-11	CARBON	47K	5%	1/6W	
R820	1-247-869-00	CARBON	39K	5%	1/6W	
R821	1-247-861-00	CARBON	18K	5%	1/6W	
R901	1-249-429-11	CARBON	10K	5%	1/6W	
R902	1-247-783-00	CARBON	10	5%	1/6W	
R903	1-247-859-00	CARBON	15K	5%	1/6W	
R904	1-247-831-00	CARBON	1K	5%	1/6W	
R905	1-247-821-00	CARBON	390	5%	1/6W	
R906	1-247-861-00	CARBON	18K	5%	1/6W	
R907	1-247-885-00	CARBON	180K	5%	1/6W	
R908	1-249-429-11	CARBON	10K	5%	1/6W	
R909	1-247-867-00	CARBON	33K	5%	1/6W	
R912	1-247-899-00	CARBON	680K	5%	1/6W	
R913	1-247-867-00	CARBON	33K	5%	1/6W	
R914	1-247-829-00	CARBON	820	5%	1/6W	
R915	1-249-429-11	CARBON	10K	5%	1/6W	
R916	1-247-831-00	CARBON	1K	5%	1/6W	
R917	1-247-807-00	CARBON	100	5%	1/6W	
R919 ⚠	1-212-853-00	FUSIBLE	6.8	5%	1/4W	F
R921	1-247-831-00	CARBON	1K	5%	1/6W	
R922	1-247-859-00	CARBON	15K	5%	1/6W	
R923	1-247-077-00	CARBON	3.3	5%	1/4W	
R925	1-249-437-11	CARBON	47K	5%	1/6W	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R926	1-247-853-00	CARBON	8.2K	5%	1/6W	
R950	1-247-857-00	CARBON	12K	5%	1/6W	
R951	1-247-867-00	CARBON	33K	5%	1/6W	

VARIABLE RESISTOR

RV001	1-228-993-00	RES, ADJ, CARBON 4.7K
RV901	1-228-994-00	RES, ADJ, CARBON 10K
RV902	1-228-998-00	RES, ADJ, METAL GLAZE 220K

RELAY

RY901	1-515-418-00	RELAY

SWITCH

S001	1-553-997-00	SWITCH, KEY BOARD
S002	1-553-997-00	SWITCH, KEY BOARD
S003	1-553-997-00	SWITCH, KEY BOARD
S004	1-553-997-00	SWITCH, KEY BOARD
S005	1-553-997-00	SWITCH, KEY BOARD
S006	1-553-997-00	SWITCH, KEY BOARD
S007	1-553-997-00	SWITCH, KEY BOARD

SAWF

SAWF101	1-404-563-11	SAWF

TRANSFORMER

T001	1-404-068-00	COIL, VIF
T002	1-404-068-00	COIL, VIF
T003	1-404-427-00	VIFT
T004	1-404-427-00	VIFT
T101	1-404-428-00	VIFT
T701	1-446-571-00	TRANSFORMER, CONVERTOR
T901	1-433-275-00	TRANSFORMER, BIAS OSCILLATOR

TUNER

TU001 ⚠	1-463-584-21	TUNER, ET (BT-881AD)

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LM-17 PW-15 US-1 LS-11 FL-8 FL-9

Ref.No	Part No.	Description	Remark
	*1-616-601-11	LM-17 BOARD ************	
		CAPACITOR	
C101	1-161-057-00	CERAMIC 0.033MF 20% 25V	
C102	1-161-057-00	CERAMIC 0.033MF 20% 25V	
		COIL	
L101	1-408-120-00	MICRO INDUCTOR 18UH	
L102	1-408-120-00	MICRO INDUCTOR 18UH	

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	*1-617-041-11	PW-15 BOARD ************	
	*3-697-646-01	HOLDER (PW), LED	
		DIODE	
D101	8-719-812-33	DIODE TLG123A	
		RESISTOR	
R101	1-247-708-11	CARBON 470 5% 1/4W	
		VARIABLE RESISTOR	
RV101	1-230-856-11	RES, VAR, CARBON 50K/50K	
		SWITCH	
SW101	1-554-174-00	SWITCH, KEY BOARD	

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	*1-616-598-11	US-1 BOARD ***********	

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	*1-616-600-11	LS-11 BOARD ************	
		CAPACITOR	
C001	1-161-057-00	CERAMIC 0.033MF 20% 25V	
C002	1-161-057-00	CERAMIC 0.033MF 20% 25V	
		COIL	
L001	1-408-120-00	MICRO INDUCTOR 18UH	
L002	1-408-120-00	MICRO INDUCTOR 18UH	

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	*A-6724-466-A	FL-8 BOARD, COMPLETE *********************	
	*3-697-606-01	HOLDER, LED, B-HIFI	
	*3-697-607-01	HOLDER (SU), LED	
	*3-697-648-01	HOLDER, INDICATION TUBE	
		CAPACITOR	
C001	1-123-356-00	ELECT 10MF 20% 16V	
		CONNECTOR	
CN001	*1-564-016-00	PIN, CONNECTOR 6P	
CN002	*1-564-001-11	PIN, CONNECTOR 2P	
		TRIMMER	
CV101	1-141-022-11	CAP, TRIMMER, CERAMIC	
		DIODE	
D001	8-719-906-49	DIODE LT-9230N	
D002	8-719-812-33	DIODE TLG123A	
		INDICATOR TUBE	
FL001	1-519-366-11	INDICATOR TUBE, FLUORESCENT	
		IC	
IC001	8-741-131-70	IC BX-1317	
		RESISTOR	
R001	1-249-437-11	CARBON 47K 5% 1/6W	
R003	1-247-801-00	CARBON 56 5% 1/6W	
R004	1-247-813-00	CARBON 180 5% 1/6W	
R005	1-247-813-00	CARBON 180 5% 1/6W	
R006	1-249-421-11	CARBON 2.2K 5% 1/6W	
R007	1-249-421-11	CARBON 2.2K 5% 1/6W	
		VARIABLE RESISTOR	
RV001	1-230-986-11	RES, VAR, SLIDE 20K/20K	
RV002	1-228-994-00	RES, ADJ, CARBON 10K	
RV003	1-228-994-00	RES, ADJ, CARBON 10K	
		SWITCH	
S001	1-554-174-00	SWITCH, KEY BOARD	
S002	1-554-174-00	SWITCH, KEY BOARD	
S003	1-554-174-00	SWITCH, KEY BOARD	
S004	1-554-174-00	SWITCH, KEY BOARD	
S005	1-554-174-00	SWITCH, KEY BOARD	
S006	1-554-174-00	SWITCH, KEY BOARD	

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	*A-6724-467-A	FL-9 BOARD, COMPLETE *********************	
		CAPACITOR	
C102	1-123-617-00	ELECT 10MF 20% 16V	
C103	1-123-617-00	ELECT 10MF 20% 16V	

When indicating parts by reference number, please include the board name.

FL-9 FR-20

Ref.No	Part No.	Description				Remark
C104	1-102-508-00	CERAMIC	10PF	0.5PF	50V	
C105	1-161-025-00	CERAMIC	0.1MF	10%	25V	
C106	1-123-611-00	ELECT	1MF	20%	50V	
		CONNECTOR				
CN101	*1-564-003-00	PIN, CONNECTOR 4P				
CN102	*1-564-011-11	PIN, CONNECTOR 12P				
		COMPOSITION CIRCUIT BLOCK				
CP101	1-232-967-11	COMPOSITION CIRCUIT BLOCK				
		DIODE				
D102	8-719-100-54	DIODE RD9.1E-B2				
		IC				
IC101	8-752-800-26	IC CXP5016-104S				
IC102	8-759-913-41	IC S-8054ALB				
		TRANSISTOR				
Q102	8-729-900-80	TRANSISTOR DTC114ES				
Q103	8-729-900-80	TRANSISTOR DTC114ES				
		RESISTOR				
R104	1-249-429-11	CARBON	10K	5%	1/6W	
R107	1-247-843-00	CARBON	3.3K	5%	1/6W	
R109	1-247-879-00	CARBON	100K	5%	1/6W	
		CRYSTAL				
X101	1-567-519-11	VIBRATOR, CRYSTAL				

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*A-6725-469-A FR-20 BOARD, COMPLETE
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Ref.No	Part No.	Description				Remark
	*3-684-005-01	HOLDER (S), LED				
	*3-697-663-01	HOLDER (FR), LED				
		CAPACITOR				
C001	1-161-025-00	CERAMIC	0.1MF	10%	25V	
C002	1-161-025-00	CERAMIC	0.1MF	10%	25V	
C003	1-102-518-00	CERAMIC	33PF	5%	50V	
C004	1-102-518-00	CERAMIC	33PF	5%	50V	
		CONNECTOR				
CN004	*1-564-016-00	PIN, CONNECTOR 6P				
CN005	*1-564-013-00	PIN, CONNECTOR 3P				
CN006	*1-564-013-00	PIN, CONNECTOR 3P				
		DIODE				
D001	8-719-911-19	DIODE 1SS119				
D002	8-719-911-19	DIODE 1SS119				
D003	8-719-911-19	DIODE 1SS119				
D004	8-719-911-19	DIODE 1SS119				
D005	8-719-911-19	DIODE 1SS119				
D006	8-719-911-19	DIODE 1SS119				
D007	8-719-911-19	DIODE 1SS119				
D008	8-719-812-33	DIODE TLG123A				
D009	8-719-812-31	DIODE TLR123				
D010	8-719-812-31	DIODE TLR123				
D011	8-719-812-31	DIODE TLR123				
D012	8-719-812-30	DIODE TLO123				
D013	8-719-812-32	DIODE TLY123				
D014	8-719-812-32	DIODE TLY123				
D015	8-719-812-33	DIODE TLG123A				
D016	8-719-812-33	DIODE TLG123A				
D017	8-719-812-33	DIODE TLG123A				
D018	8-719-812-33	DIODE TLG123A				
D019	8-719-812-33	DIODE TLG123A				
D020	8-719-812-33	DIODE TLG123A				
D021	8-719-812-33	DIODE TLG123A				
D022	8-719-812-33	DIODE TLG123A				
D023	8-719-812-33	DIODE TLG123A				
D024	8-719-812-33	DIODE TLG123A				
D025	8-719-911-19	DIODE 1SS119				
D026	8-719-911-19	DIODE 1SS119				
D027	8-719-911-19	DIODE 1SS119				
D028	8-719-911-19	DIODE 1SS119				
D029	8-719-911-19	DIODE 1SS119				
D030	8-719-911-19	DIODE 1SS119				
D031	8-719-911-19	DIODE 1SS119				
D032	8-719-911-19	DIODE 1SS119				
D033	8-719-911-19	DIODE 1SS119				
D034	8-719-911-19	DIODE 1SS119				
D035	8-719-911-19	DIODE 1SS119				
D036	8-719-911-19	DIODE 1SS119				
		IC				
IC001	8-759-105-54	IC UPD7508HG-536-22				
IC002	8-759-901-38	IC SN74LS138N				
		TRANSISTOR				
Q001	8-729-245-83	TRANSISTOR 2SC2458				
Q002	8-729-245-83	TRANSISTOR 2SC2458				
Q003	8-729-902-11	TRANSISTOR 2SC2021				
Q004	8-729-902-11	TRANSISTOR 2SC2021				
Q005	8-729-245-83	TRANSISTOR 2SC2458				
Q006	8-729-245-83	TRANSISTOR 2SC2458				
Q007	8-729-245-83	TRANSISTOR 2SC2458				
Q008	8-729-245-83	TRANSISTOR 2SC2458				
Q009	8-729-117-54	TRANSISTOR 2SA1175				
Q020	8-729-117-54	TRANSISTOR 2SA1175				
		RESISTOR				
R004	1-249-437-11	CARBON	47K	5%	1/6W	
R005	1-247-873-00	CARBON	56K	5%	1/6W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R006	1-249-437-11	CARBON	47K	5%	1/6W	
R007	1-247-873-00	CARBON	56K	5%	1/6W	
R008	1-247-843-00	CARBON	3.3K	5%	1/6W	
R009	1-247-879-00	CARBON	100K	5%	1/6W	
R018	1-247-879-00	CARBON	100K	5%	1/6W	
R019	1-247-879-00	CARBON	100K	5%	1/6W	
R020	1-247-879-00	CARBON	100K	5%	1/6W	
R021	1-247-879-00	CARBON	100K	5%	1/6W	
R022	1-247-879-00	CARBON	100K	5%	1/6W	
R023	1-247-879-00	CARBON	100K	5%	1/6W	
R024	1-247-879-00	CARBON	100K	5%	1/6W	
R025	1-247-805-00	CARBON	82	5%	1/6W	
R026	1-247-805-00	CARBON	82	5%	1/6W	
R027	1-247-805-00	CARBON	82	5%	1/6W	
R028	1-247-805-00	CARBON	82	5%	1/6W	
R029	1-247-805-00	CARBON	82	5%	1/6W	
R030	1-247-805-00	CARBON	82	5%	1/6W	
R031	1-247-805-00	CARBON	82	5%	1/6W	
R032	1-247-809-00	CARBON	120	5%	1/6W	
R033	1-249-414-11	CARBON	560	5%	1/6W	
R034	1-249-414-11	CARBON	560	5%	1/6W	
R035	1-249-421-11	CARBON	2.2K	5%	1/6W	
R036	1-247-859-00	CARBON	15K	5%	1/6W	
R037	1-247-843-00	CARBON	3.3K	5%	1/6W	
R040	1-247-895-11	CARBON	470K	5%	1/6W	

VARIABLE RESISTOR

RV001	1-230-431-11	RES, VAR, CARBON 100K
RV002	1-230-430-11	RES, VAR, CARBON 10K
RV003	1-230-430-11	RES, VAR, CARBON 10K

SWITCH

S001	1-553-716-00	SWITCH, SLIDE
S002	1-553-754-00	SWITCH, SLIDE
S003	1-553-716-00	SWITCH, SLIDE
S004	1-553-754-00	SWITCH, SLIDE
S005	1-553-716-00	SWITCH, SLIDE
S006	1-553-754-00	SWITCH, SLIDE
S007	1-553-716-00	SWITCH, SLIDE
S008	1-553-716-00	SWITCH, SLIDE
S009	1-553-716-00	SWITCH, SLIDE
S010	1-553-754-00	SWITCH, SLIDE
S011	1-554-174-00	SWITCH, KEY BOARD
S012	1-554-174-00	SWITCH, KEY BOARD
S013	1-554-174-00	SWITCH, KEY BOARD
S014	1-554-174-00	SWITCH, KEY BOARD
S015	1-554-174-00	SWITCH, KEY BOARD
S016	1-554-174-00	SWITCH, KEY BOARD
S017	1-554-174-00	SWITCH, KEY BOARD
S018	1-554-174-00	SWITCH, KEY BOARD
S019	1-554-174-00	SWITCH, KEY BOARD
S020	1-554-174-00	SWITCH, KEY BOARD
S021	1-554-174-00	SWITCH, KEY BOARD
S022	1-554-174-00	SWITCH, KEY BOARD
S023	1-554-174-00	SWITCH, KEY BOARD
S024	1-554-174-00	SWITCH, KEY BOARD
S025	1-554-174-00	SWITCH, KEY BOARD
S026	1-554-174-00	SWITCH, KEY BOARD
S027	1-554-174-00	SWITCH, KEY BOARD
S028	1-554-174-00	SWITCH, KEY BOARD
S029	1-554-174-00	SWITCH, KEY BOARD
S030	1-554-174-00	SWITCH, KEY BOARD
S031	1-554-174-00	SWITCH, KEY BOARD
S032	1-554-174-00	SWITCH, KEY BOARD
S033	1-554-174-00	SWITCH, KEY BOARD
S034	1-554-174-00	SWITCH, KEY BOARD
S035	1-554-174-00	SWITCH, KEY BOARD
S037	1-554-174-00	SWITCH, KEY BOARD
S038	1-554-174-00	SWITCH, KEY BOARD

CRYSTAL

X001	1-527-822-00	OSCILLATOR, CERAMIC

****

*1-616-599-11 RD-17 BOARD
****

*3-696-392-01 HOLDER, PI

DIODE

PC001	8-719-751-42	DIODE NJL5141E-AC
PC002	8-719-751-42	DIODE NJL5141E-AC

****

*1-617-042-11 HP-18 BOARD
****

JACK

J001	1-507-796-21	JACK

****

*1-617-043-11 MC-10 BOARD
****

JACK

J901	1-507-678-00	JACK

RESISTOR

R102	1-247-831-00	CARBON	1K	5%	1/6W
R103	1-247-879-00	CARBON	100K	5%	1/6W

****

*1-616-602-11 OC-1 BOARD
****

SWITCH

MS-1	1-570-424-11	SWITCH, MICRO
MS-2	1-570-424-11	SWITCH, MICRO

****

When indicating parts by reference number, please include the board name.

POWER BLOCK

Ref.No.	Part No.	Description		Remark
	⚠1-413-229-11	REGULATOR, SWITCHING (SR-21E)		
		********************************		
		M BOARD, COMPLETE		
		*****************		
	⚠2-431-533-01	COVER, CAPACITOR		
	⚠*2-431-517-01	PLATE, HOLDER, TRANSISTOR		
	⚠2-431-531-01	RUBBER, STB-SR21		
		CAPACITOR		
C602	⚠1-161-742-12	CERAMIC	0.0022MF	400V
C603	⚠1-161-742-12	CERAMIC	0.0022MF	400V
C604	⚠1-161-742-12	CERAMIC	0.0022MF	400V
C605	⚠1-161-742-12	CERAMIC	0.0022MF	400V
C606	⚠1-136-416-11	FILM	0.22MF	250V
C607	⚠1-161-743-12	CERAMIC	0.0047MF	400V
C608	⚠1-161-743-12	CERAMIC	0.0047MF	400V
C609	1-125-352-00	ELECT	180MF	400V
C611	1-124-023-00	ELECT	4.7MF	350V
C612	1-124-162-00	ELECT	47MF	10V
C613	1-124-162-00	ELECT	47MF	10V
C621	1-106-347-00	FILM	0.0015MF	200V
C622	1-106-347-00	FILM	0.0015MF	200V
C623	1-161-910-00	CERAMIC	390PF	500V
C624	1-161-910-00	CERAMIC	390PF	500V
C625	1-161-915-00	CERAMIC	0.001MF	500V
C626	1-136-153-00	FILM	0.01MF	50V
C627	1-136-157-00	FILM	0.022MF	50V
C628	1-123-385-00	ELECT	22MF	100V
C630	1-124-597-11	ELECT	2200MF	16V
C631	1-136-157-00	FILM	0.022MF	50V
		CONNECTOR		
CN620	1-508-847-00	PIN, CONNECTOR 4P		
		DIODE		
D601	8-719-300-63	DIODE LB156		
D621	8-719-908-00	DIODE ESAC33-02C5		
D622	8-719-900-93	DIODE V09C		
D623	8-719-815-85	DIODE 1S1585		
D624	8-719-100-61	DIODE RD11EB2		
D625	8-719-100-44	DIODE RD7.5EB2		
D626	8-719-100-50	DIODE RD9.1EB1		
D641	8-719-900-93	DIODE V09C		
		FERRITE BEAD		
FB621	1-543-060-00	BEAD, FERRITE		
FB622	1-543-060-00	BEAD, FERRITE		
FB623	1-543-060-00	BEAD, FERRITE		
FB624	1-543-060-00	BEAD, FERRITE		

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No.	Part. No.	Description			Remark
		COIL			
L601	⚠1-421-824-11	TRANSFORMER, LINE FILTER 20MH			
L621	1-421-791-11	COIL, CHOKE 2MH			
		TRANSISTOR			
Q601	8-729-104-66	TRANSISTOR 2SC3158			
Q602	8-729-104-66	TRANSISTOR 2SC3158			
Q603	8-729-100-13	TRANSISTOR 2SC2001			
Q604	8-729-100-13	TRANSISTOR 2SC2001			
Q621	8-729-306-72	TRANSISTOR 2SD667A			
Q622	8-729-245-83	TRANSISTOR 2SC2458			
		RESISTOR			
R602	1-205-783-11	WIRE WOUND	2.2	5W	F
R603	1-246-528-00	CARBON	200K	1/4W	
R604	1-246-528-00	CARBON	200K	1/4W	
R605	1-246-528-00	CARBON	200K	1/4W	
R606	1-246-528-00	CARBON	200K	1/4W	
R607	⚠1-212-946-11	FUSIBLE	3.3	1/2W	F
R608	⚠1-212-946-11	FUSIBLE	3.3	1/2W	F
R609	1-247-700-11	CARBON	100	1/4W	
R610	1-247-700-11	CARBON	100	1/4W	
R611	⚠1-217-418-21	FUSIBLE	0.47	1/2W	F
R621	1-206-475-11	METAL OXIDE	33	2W	F
R622	1-535-363-00	SHUNT	0.02	2W	
R623	1-247-143-00	CARBON	3.3K	1/4W	
R624	1-247-713-11	CARBON	1K	1/4W	
R625	1-247-700-11	CARBON	100	1/4W	
R626	1-213-157-11	METAL OXIDE	15K	1W	F
R627	1-247-713-11	CARBON	1K	1/4W	
R628	1-247-717-11	CARBON	2.2K	1/4W	
R629	1-249-455-11	CARBON	4.7	1/4W	
R630	1-247-702-11	CARBON	150	1/4W	
		TRANSFORMER			
T601	⚠1-447-677-41	TRANSFORMER, CONVERTER			
T602	⚠1-437-120-11	TRANSFORMER, DRIVE			
**********	**************	******************	**********	**********	******
		CN BOARD, COMPLETE			
		******************			
		CAPACITOR			
C636	1-123-330-00	ELECT	22MF	25V	
C637	1-123-323-00	ELECT	470MF	16V	
C638	1-124-555-00	ELECT	1000MF	16V	
C639	1-123-323-00	ELECT	470MF	16V	
C641	1-123-333-00	ELECT	100MF	25V	
C642	1-123-333-00	ELECT	100MF	25V	
C643	1-123-357-00	ELECT	22MF	50V	
C644	1-123-357-00	ELECT	22MF	50V	
C645	1-123-356-00	ELECT	10MF	50V	
C646	1-123-357-00	ELECT	22MF	50V	

POWER BLOCK

Ref.No.	Part No.	Description			Remark
		CONNECTOR			
CN1	*1-564-163-00	PIN, CONNECTOR 6P			
CN001	*1-560-894-00	PIN, CONNECTOR 6P			
CN002	*1-560-893-00	PIN, CONNECTOR 5P			
CN003	*1-560-891-00	PIN, CONNECTOR 3P			
CN004	*1-560-892-00	PIN, CONNECTOR 4P			
CN005	*1-560-896-00	PIN, CONNECTOR 8P			
		DIODE			
D630	8-719-101-04	DIODE RD33EB2			
D631	8-719-911-19	DIODE 1SS119			
D636	8-719-911-19	DIODE 1SS119			
D637	8-719-911-19	DIODE 1SS119			
D638	8-719-100-40	DIODE RD6.8EB1			
D639	8-719-911-19	DIODE 1SS119			
D640	8-719-100-38	DIODE RD6.2EB2			
		COIL			
L622	1-421-421-00	COIL, CHOKE 100μH			
L623	1-421-421-00	COIL, CHOKE 100μH			
L624	1-408-933-00	COIL, CHOKE 10μH			
		TRANSISTOR			
Q623	8-729-245-83	TRANSISTOR 2SC2458-GR			
Q624	8-729-204-83	TRANSISTOR 2SA1048-GR			
Q626	8-729-188-23	TRANSISTOR 2SD882			
Q627	8-729-188-23	TRANSISTOR 2SD882			
Q628	8-729-245-83	TRANSISTOR 2SC2458-GR			
		RESISTOR			
R640	1-247-159-00	CARBON	15K	1/4W	
R641	1-247-147-00	CARBON	4.7K	1/4W	
R642	1-247-147-00	CARBON	4.7K	1/4W	
R643	1-247-141-00	CARBON	2.7K	1/4W	
R644	1-247-143-00	CARBON	3.3K	1/4W	
R645	1-247-134-00	CARBON	1.3K	1/4W	
R646	1-247-155-00	CARBON	10K	1/4W	
R647	1-247-147-00	CARBON	4.7K	1/4W	
R650	1-205-724-11	CEMENT-COATED	22	5W	F
R651	1-247-129-00	CARBON	820	1/4W	
R652	1-205-789-11	CEMENT-COATED	1.8	5W	F
R653 ⚠	1-247-920-61	CARBON	150	1/2W	F
R654	1-247-133-00	CARBON	1.2K	1/4W	
R655	1-247-141-00	CARBON	2.7K	1/4W	
R6					
		VARIABLE RESISTOR			
RV621	1-228-991-00	RES, ADJ, METAL GLAZE 2.2K			
		RELAY			
RY621	1-515-462-00	RELAY			

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Ref.No	Part No.	Description			Remark
	*1-616-113-11	C BOARD *******			
		CAPACITOR			
C1	1-123-333-00	ELECT	100MF	25V	
C2	1-130-150-00	FILM	0.0056MF	50V	
C3	1-136-159-00	FILM	0.033MF	50V	
C4	1-136-145-00	FILM	0.0022MF	50V	
C5	1-123-318-00	ELECT	33MF	16V	
		DIODE			
D1	8-719-200-02	DIODE 10E-2			
D2	8-719-100-67	DIODE RD13EB1			
		IC			
IC1	8-759-937-59	IC MB-3759			
		RESISTOR			
R1	1-247-825-00	CARBON	560	1/6W	
R2	1-247-867-00	CARBON	33K	1/6W	
R3	1-247-843-00	CARBON	3.3K	1/6W	
R4	1-247-831-00	CARBON	1K	1/6W	
R5	1-247-849-00	CARBON	5.6K	1/6W	
R6	1-249-421-11	CARBON	2.2K	1/6W	
R7	1-247-841-00	CARBON	2.7K	1/6W	
R8	1-247-836-00	CARBON	1.6K	1/6W (STANDARD)	
	1-249-419-11	CARBON	1.5K	1/6W (ADJUST)	
	1-247-837-00	CARBON	1.8K	1/6W (ADJUST)	
R9	1-247-861-00	CARBON	18K	1/6W	
R10	1-247-700-11	CARBON	100	1/4W	
		VARIABLE RESISTOR			
RV1	1-228-141-00	RES, ADJ, METAL GLAZE 500			
	*1-616-114-11	D BOARD *******			
		CAPACITOR			
C21	1-136-150-00	FILM	0.0056MF	50V	
C22	1-123-356-00	ELECT	10MF	50V	
C23	1-161-915-00	CERAMIC	0.001MF	500V	
C24	1-123-333-00	ELECT	100MF	25V	
C25	1-136-165-00	FILM	0.1MF	50V	
C26	1-136-165-00	FILM	0.1MF	50V	
C27	1-123-357-00	ELECT	22MF	50V	
C28	1-123-357-00	ELECT	22MF	50V	
		CONNECTOR			
CN21	1-564-163-00	PIN, CONNECTOR 6P			
		DIODE			
D21	8-719-815-85	DIODE 1S1585			
D22	8-719-815-85	DIODE 1S1585			
D23	8-719-815-85	DIODE 1S1585			

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

POWER BLOCK

Ref.No.	Part No.	Description	Remark
		IC	
IC21	8-759-937-59	IC MB3759	
		COIL	
L21	1-421-550-00	COIL, CHOKE 66μH	
L22	1-421-421-00	COIL, CHOKE 100μH	
L23	1-408-421-00	MICRO INDUCTOR 100μH	
L24	1-408-421-00	MICRO INDUCTOR 100μH	
L25	1-408-427-00	MICRO INDUCTOR 330μH	
L26	1-408-427-00	MICRO INDUCTOR 330μH	
		IC LINK	
PS21	⚠.1-532-679-11	LINK, IC	
		TRANSISTOR	
Q21	8-729-177-43	TRANSISTOR 2SD774	
Q22	8-729-177-43	TRANSISTOR 2SD774	
		RESISTOR	
R21	⚠.1-247-913-61	CARBON 1K 1/4W	F
R22	1-247-807-00	CARBON 100 1/6W	
R23	1-247-807-00	CARBON 100 1/6W	
R24	1-247-837-00	CARBON 1.8K 1/6W (STANDARD)	
	1-249-419-11	CARBON 1.5K 1/6W (ADJUST)	
	1-249-421-11	CARBON 2.2K 1/6W (ADJUST)	
R25	1-247-859-00	CARBON 15K 1/6W	
R26	1-247-869-00	CARBON 39K 1/6W	
R27	1-247-811-00	CARBON 150 1/6W	
R28	1-247-887-00	CARBON 220K 1/6W	
R29	1-247-831-00	CARBON 1K 1/6W	
		VARIABLE RESISTOR	
RV21	1-228-644-00	RES, ADJ, METAL GLAZE 1K	
		TRANSFORMER	
T21	1-448-269-11	TRANSFORMER, DC-DC CONVERTER	

****

Ref.No.	Part No.	Description	Remark
	⚠.*1-616-498-11	F BOARD *******	
	⚠.1-533-170-11	HOLDER, FUSE	
	⚠.*1-535-443-11	TERMINAL, PIN, AC CORD	
		CAPACITOR	
C601	⚠.1-136-416-11	FILM 0.22MF 250V	
		FUSE	
F601	⚠.1-532-237-11	FUSE, TIME LAG, T3.15A 250V	
		RESISTOR	
R601	⚠.1-214-947-21	METAL 2.7M 1/2W	

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Ref.No	Part No.	Description	Remark
		MISCELLANEOUS **************	
	⚠.1-413-229-11	REGULATOR, SWITCHING (SR-21E)	
	⚠.1-464-479-11	BOOSTER MIXER, RF MODULATOR (ES MODEL)	
	⚠.1-464-481-11	BOOSTER MIXER, RF MODULATOR (E MODEL)	
	1-464-526-11	T COIL SENSOR	
	1-464-527-11	S COIL SENSOR	
	1-520-485-11	METER UNIT, LEVEL	
	⚠ 1-534-817-31	CORD, POWER	
	8-825-508-10	HEAD, FE	
M902	8-838-096-01	MOTOR, DC (BHF-1914A) (CAPSTAN MOTOR)	
M904	X-3696-314-1	MOTOR ASSY, L (LOADING MOTOR)	
M905	X-3696-306-1	MOTOR ASSY, DC (SKATE MOTOR)	
S901	1-554-839-11	SWITCH, LEAF (2 GANG)	
S902	1-570-394-21	SWITCH, ROTARY (ROTARY ENCODER)	

ACCESSORIES AND PACKING MATERIALS

****

Part No.	Description	Remark
A-6765-943-A	COMMANDER ASSY (RMT-223)	
1-551-513-00	CORD ASSY, COAXIAL	
*3-681-287-01	LID, ACCESSORY CASE	
3-694-484-01	DRIVER, VOLUME	
*3-697-649-01	CASE, ACCESSORY	
*3-697-650-01	CUSHION (UPPER)	
*3-697-651-02	CUSHION (LOWER)	
*3-697-684-01	INDIVIDUAL CARTON (ES MODEL)	
*3-697-711-01	INDIVIDUAL CARTON (E MODEL)	
*3-697-712-01	SHEET, PROTECTION	
3-760-837-11	MANUAL, INSTRUCTION	
3-760-837-41	MANUAL, INSTRUCTION (ES MODEL)	
3-760-837-52	MANUAL, INSTRUCTION	

****

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

3. CORRECTION

☛ : **Corrected Portion**

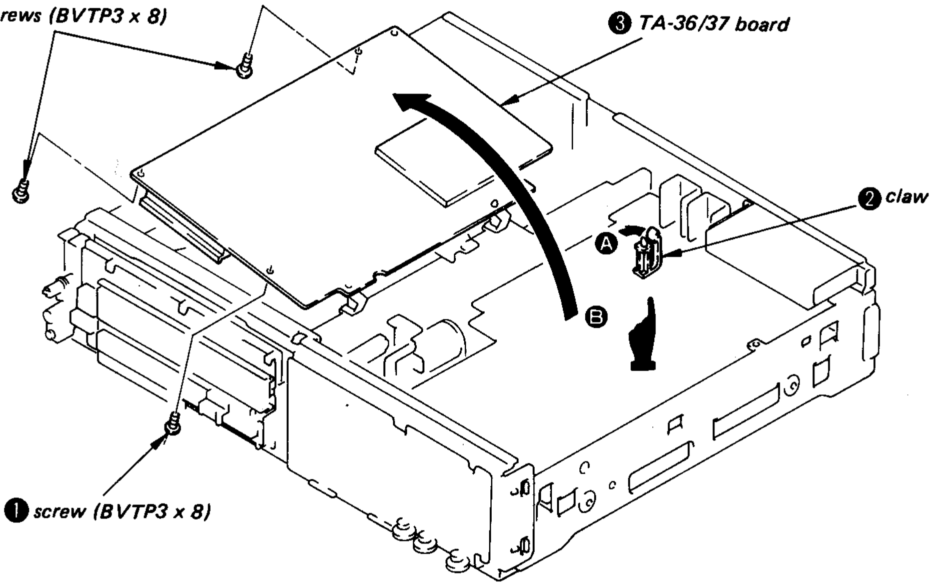
DISASSEMBLY

Page 36

2-2. REMOVAL OF THE TA-36/37 BOARD

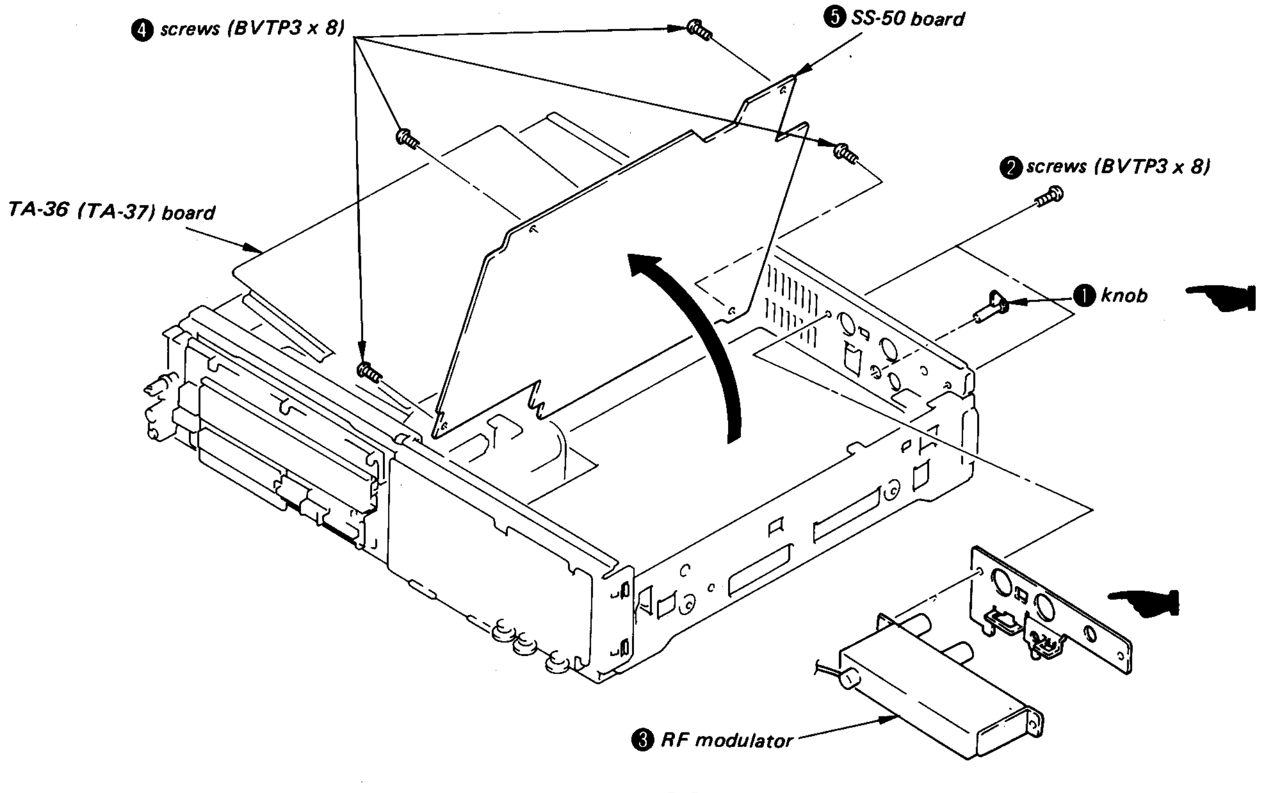
1) Remove the three screws (BVTP3 x 8) ❶.

☛ 2) Remove the claw ❷ in the direction shown by the arrow Ⓐ, then remove the TA-36/37 board ❸ in the direction shown by the arrow Ⓑ.


❶ screws (BVTP3 x 8)
❸ TA-36/37 board
❷ claw
Ⓐ
Ⓑ
❶ screw (BVTP3 x 8)

2-3. REMOVAL OF THE SS-50 BOARD

1) Remove the TA-36/37 baord. (Refer to section 2-2. REMOVAL OF THE TA-36/37 BOARD.)
2) Remove the knob ❶. ☛
3) Remove the two screws (BVTP3 x 8) ❷.
4) Remove the RF modulator ❸.
5) Remove the four screws ❹.
6) Remove the SS-50 board ❺ in the direction shown by the arrow.


❹ screws (BVTP3 x 8)
❺ SS-50 board
❷ screws (BVTP3 x 8)
TA-36 (TA-37) board
❶ knob
❸ RF modulator

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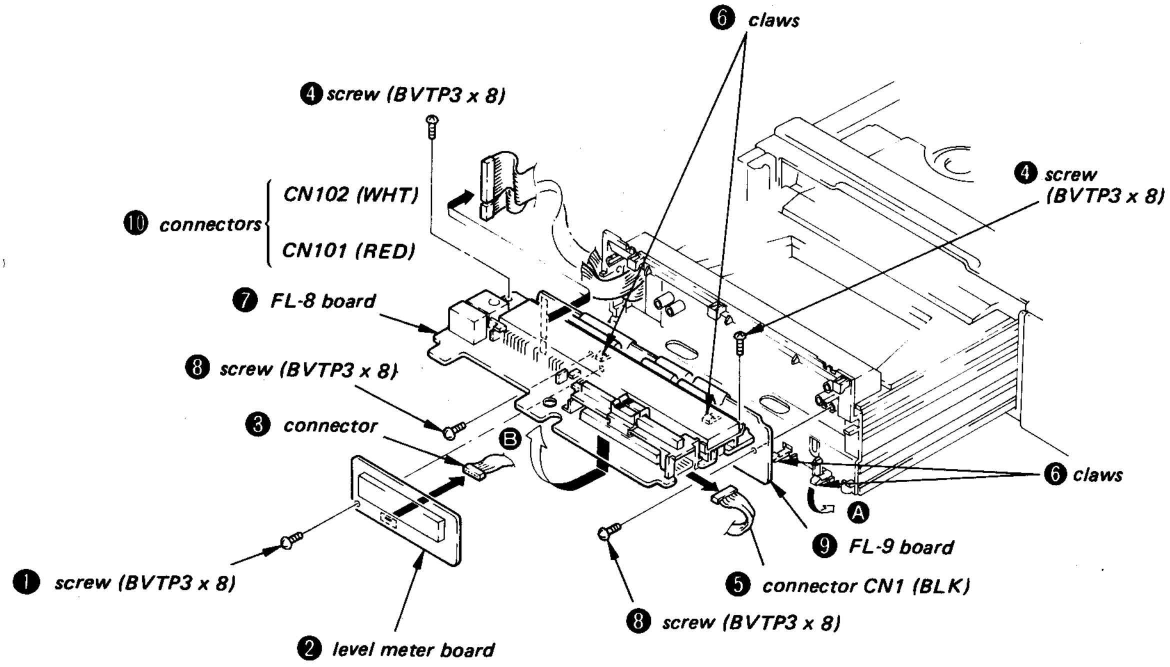
2-6. REMOVAL OF THE FL-8, FL-9 BOARD

1) Remove the one screw (BVTP3 x 8) ❶.
2) Remove the level meter board ❷.
3) Pull out the connector ❸.
4) Remove the two screws ❹. ☛
5) Pull out the connector ❺.
6) ☛ Remove the four claws ❻ in the direction shown by the arrow Ⓐ, then remove the FL-8 board ❼ in the direction shown by the arrow Ⓑ.
7) Remove the two screws (BVTP3 x 8) ❽.
8) Remove the FL-9 board ❾.
9) Pull out the two connectors ❿.


❻ claws
❹ screw (BVTP3 x 8)
❿ connectors
CN102 (WHT)
CN101 (RED)
❹ screw (BVTP3 x 8)
❼ FL-8 board
❽ screw (BVTP3 x 8)
❸ connector
Ⓑ
❻ claws
Ⓐ
❾ FL-9 board
❶ screw (BVTP3 x 8)
❺ connector CN1 (BLK)
❽ screw (BVTP3 x 8)
❷ level meter board

ADJUSTMENTS (SUPPLEMENT-1)

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3) RF Switching Position Adjustment (SS-50 Board)

Mode: Playback
Signal: Alignment tape colour-bar or monoscope
Oscilloscope: CH-1 TP304 (Pin ㉞ of IC301)
(RF SW PULSE)
CH-2 Pin ① of CN309 (DRUM PG)

[Adjustment method]

i) PG (A) Edge
Adjust to 900 ±30 μsec with RV303.
(See Fig. 5-11 (a))

ii) PG (B) Edge
Adjust the duty cycle of RF SW PULSE to 50% ±5 μsec.

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16) Chroma Record Current Adjustment (YC-40 Board)

Mode: Record (PRO mode)
Signal: Colour-bar
Oscilloscope: Emitter of Q310 on DH-4 board.

[Adjustment method]

Adjust to 150 ±5 mVp-p with RV008.

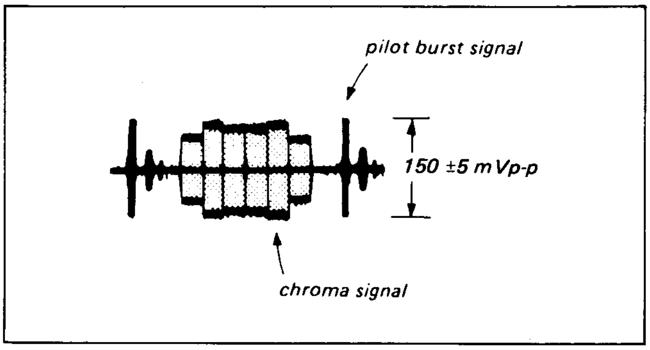

Fig. 5-30. Chroma record current adjustment

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